

Tilburg University

Network neutrality between false positives and false negatives

Sluijs, J.P.J.B.

Published in:
Federal Communications Law Journal

Publication date:
2010

Document Version
Publisher's PDF, also known as Version of record

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):
Sluijs, J. P. J. B. (2010). Network neutrality between false positives and false negatives: Introducing a European approach to American broadband markets. *Federal Communications Law Journal*, 62(1), 77-117.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Network Neutrality Between False Positives and False Negatives: Introducing a European Approach to American Broadband Markets

Jasper P. Sluijs*

I.	INTRODUCTION.....	78
II.	SOME NOTES ON NETWORK NEUTRALITY, NETWORK MANAGEMENT, AND EMERGING BROADBAND MARKETS	81
III.	EUROPEAN AND AMERICAN PATHS TO PRESENT-DAY TELECOMMUNICATIONS POLICY	87
A.	<i>A Brief History of U.S. Network Management Regulation</i>	87
1.	“The Past Is a Foreign Country”	87
2.	Present Developments: <i>Comcast</i> and the Recovery Act.....	89
B.	<i>European Telecommunications Regulation and Network Management</i>	93
1.	The Long Road to Open Markets.....	93
2.	European Telecoms Under Review	96
3.	Network Neutrality Under the New Framework.....	97
IV.	TOWARDS DYNAMIC BROADBAND POLICY	102

* Ph.D. candidate at Tilburg Law and Economics Center (TILEC), Tilburg University, the Netherlands. Helpful comments during various stages of the writing process were provided by Filomena Chirico, Pietro Crocioni, Thomas Fetzer, Bert-Jaap Koops, Pierre Larouche, Monroe Price, Chris Riley, Annemarie Wennekers, Christopher Yoo, and all participants of the U.S. and EU Telecommunications Law fall 2008 seminar at the University of Pennsylvania Law School. Further comments are welcome at jasper.sluijs@uvt.nl.

A.	<i>Antitrust Under False Positives and False Negatives</i>	103
B.	<i>Network Management Under False Positives and False Negatives</i>	110
V.	CONCLUSION	116

I. INTRODUCTION

Since the early twenty-first century, the network neutrality debate has been a heated discussion concerning the amount of control (network management) that network operators and service providers have over the traffic of content on their network. This debate is particularly pressing in light of the development of next-generation broadband infrastructures. The academic network neutrality discourse has taken place mainly in the United States. Recently, however, the debate on network neutrality has gained traction among European academics and regulators as well.

There are clear differences between the U.S. and European telecom markets and the regulation thereof. Most clearly, Europe comes from a tradition of state monopolies; whereas, U.S. telecommunications operators have almost always been private enterprises. Late 2008 and early 2009 have witnessed development in telecommunications policy and the network neutrality dispute on both sides of the Atlantic. The FCC made its landmark decision in the *Comcast* case.¹ The Obama Administration is currently formulating its telecommunications policies. The American Recovery and Reinvestment Act's (Recovery Act) Broadband Technology Opportunities Program (BTOP) underscores the Administration's dedication to incentivizing development of "neutral" broadband networks throughout the United States.² At the same time, European regulators are reviewing their regulatory framework for telecommunications, which consists of an elaborate set of laws applicable to all EU member states. European lawmakers are also in the process of developing a strategy of fostering broadband deployment under a comprehensible network-management regime.³ In fact, the *New York Times* reports that European telecommunications reform has drawn considerable interest from U.S.

1. Formal Complaint of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, *Memorandum Opinion and Order*, 23 F.C.C.R. 13028 (2008).

2. See 47 U.S.C. § 1305(j) (2009) (requiring adherence to 20 F.C.C.R. 14986 (2005) for grants under the Act).

3. See PARL. EUR. DOC. (SEC 2007) 1472, at 90-102 [hereinafter "Impact Assessment"].

lobbyists for the telecommunications industry.⁴ It would thus be a worthwhile endeavor to critically compare the regulatory actions of both the European Institutions and the U.S. Congress and FCC concerning network management and broadband deployment.⁵

The present Article offers a critical review of U.S. and European telecommunications policy in relation to network neutrality and network management and investigates which aspects of European broadband policy may be worth emulating in the United States. In an attempt to minimize regulatory errors, European regulators in telecommunications have developed an analytical legal mechanism in which antitrust and sector-specific regulation interact.⁶ This mechanism allows for close monitoring of markets under antitrust law and permits regulation in case of demonstrated market failure. This regulatory mechanism is slated to be lifted when the regulated market becomes competitive again.

However well developed this European system may be, there are many relevant points for criticism. European lawmakers struggle with network neutrality, and weak compromises have arisen out of conflicts between European regulatory bodies. These compromises led to a wait-and-see stance toward network neutrality. This Article will argue that such a wait-and-see policy is not the optimal approach when considering that broadband is a complex emerging market. Rather, a more dynamic policy that balances investment incentives and externalities in next-generation broadband is recommended.⁷ The European willingness to compromise provides an opportunity for U.S. regulators to develop a policy that broadly follows the European legal framework, but is better developed in terms of network neutrality issues. As the FCC is required to produce a national

4. Kevin J. O'Brien, *U.S. Lobbyists Angle for Influence in Europe's Net Neutrality Debate*, N.Y. TIMES, March 8, 2009, available at <http://www.nytimes.com/2009/03/08/technology/08iht-neutral.1.20669185.html>.

5. See David Lazer & Viktor Mayer-Schönberger, *Governing Networks: Telecommunication Deregulation in Europe and the United States*, 27 BROOK. J. INT'L L. 819 (2002) (providing comparative studies on European and American telecommunications policy); Amit M. Schejter, 'From All My Teachers I Have Grown Wise, and from My Students More than Anyone Else': What Lessons Can the US Learn from Broadband Policies in Europe? 71 INT'L COMM. GAZETTE 429 (2009). See also Rebecca Wong & Daniel B. Garrie, *Network Neutrality: Laissez-Faire Approach or Not?*, 34 RUTGERS COMPUTER & TECH. L.J. 315 (2008) (offering a specific and comparative study on network neutrality in the EU and United States).

6. See generally Damien Geradin & Michel Kerf, *Controlling Market Power in Telecommunications: Antitrust vs Sector-specific Regulation* (2008).

7. See Pietro Crocioni, *Leveraging of Market Power in Emerging Markets: A Review of Cases, Literature, and a Suggested Framework*, 4 J. OF COMPETITION L. & ECON. 449, 512 (2008).

broadband plan under the Recovery Act,⁸ it has ample opportunity to develop such a dynamic strategy to further broadband deployment throughout the United States.

The structure of this Article is as follows: Section I will provide a short background on the network neutrality debate by examining its technical, legal, and economic context. To further demonstrate the complexity of developing a comprehensive network neutrality policy, this Article defines particulars of the emerging broadband market. Section II will examine U.S. and European telecommunications policies. This Article's analysis of U.S. telecommunications policy will focus on the most recent events in network neutrality and network management—the *Comcast* case, the Recovery Act, and the FCC's Notice of Proposed Rulemaking. This Article will then discuss how Congress and the FCC have progressively deregulated the telecommunications sector and how recent developments may signal a reversal of those deregulatory tendencies.

The background of European telecommunications policy will be discussed in order to show how the interaction between sector-specific regulation and antitrust has developed in the EU. Pan-European policy was implemented to allow for an internal, competitive European telecommunications market, which would fuel innovation, increase diversity and quality, and lower prices. This policy has largely been successful. The current review process of the European regulatory framework has attempted to address network neutrality concerns. Closer analysis demonstrates this preliminary European network neutrality policy to be too cautious, and practical problems may arise.

However, Section III argues that, notwithstanding these practical problems, the European framework potentially offers an optimal approach for dealing with network neutrality issues and fosters development of next-generation broadband networks. This argument finds support in U.S. and European telecommunications policies that relate to regulatory error costs. Analysis shows that, in an emerging market, such as next-generation broadband, not only are errors more likely to occur, but they also carry larger costs than in "regular" markets.⁹

Through an analytical model, this Article will demonstrate that the European interaction of antitrust and regulation in telecommunications evades two common errors: false negatives and false positives.¹⁰ In the

8. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009).

9. Crocioni, *supra* note 7, at 451.

10. For an explanation of false positives and false negatives in law, see R.S. Radford, *Statistical Error and Legal Error: Type One and Type Two Errors and the Law*, 21 *LOY.*

former, no regulation is imposed if antitrust law falls short; while in the latter, unnecessary regulation is implemented on an otherwise competitive market. Academics have debated whether false positives or false negatives bear the largest cost to society and on which of these errors regulatory intervention should focus. By building on existing models, this Article demonstrates that costs of both errors are not as easily offset as often assumed. This invalidates elemental trade offs between the two errors, which are especially pertinent in emerging markets. Emerging markets, such as broadband, do not fare well with categorical intervention against false-negative or false-positive errors. In order to maximize responsible broadband deployment, this Article argues for a flexible and dynamic network neutrality policy that pivots between fighting false positives and false negatives when necessary. The contours of such a flexible regulatory mechanism are present in the European framework for telecommunications, and a similar mechanism could be used in dealing with network neutrality issues in the United States.

This Article thus recommends that U.S. lawmakers emulate the European dynamic interaction between antitrust and sector-specific regulation, while omitting dubious European policy decisions concerning network management. Practical scenarios for reform are suggested, such as allowing the FCC to monitor competition in broadband networks more closely. With a National Broadband Plan due in February 2010, the FCC should put effort into advancing these reform scenarios and take the opportunity to monitor competition more closely in broadband markets. This Article is intended to offer critical insight into the European telecommunications policy to benefit U.S. policymakers and academics.

II. SOME NOTES ON NETWORK NEUTRALITY, NETWORK MANAGEMENT, AND EMERGING BROADBAND MARKETS

Since the term was coined by Tim Wu in 2003,¹¹ a heated interdisciplinary debate has evolved on network neutrality.¹² At the core of

L.A. L. REV. 843 (1988); Fred S. McChesney, *Talking 'Bout My Antitrust Generation: Competition for and in the Field of Competition Law*, 52 EMORY L.J. 1401 (2003).

11. Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141 (2003).

12. See Tim Wu & Christopher S. Yoo, *Keeping the Internet Neutral?: Tim Wu and Christopher Yoo Debate*, 59 FED. COMM. L.J. 575 (2006) (providing an overview of the U.S. legal debate); see generally Robert D. Atkinson & Philip J. Weiser, *A 'Third Way' on Network Neutrality* (Working Paper), available at <http://ssrn.com/abstract=1004522>; David D. Clark, *Network Neutrality: Words of Power and 800-pound Gorillas*, 1 INT'L J. COMM. 701 (2007); Susan P. Crawford, *Transporting Communications*, 89 B.U. L. REV. 871 (2009); Jon Crowcroft, *Net Neutrality: The Technical Side of the Debate ~ A White Paper*, 1 INT'L J. COMM. 567 (2007); Rob Frieden, *Network Neutrality or Bias?—Handicapping the Odds for a Tiered and Branded Internet*, 29 HASTINGS COMM. & ENT. L.J. 171 (2006); Brett M.

the debate lies the question whether or not all content and service providers on the Internet should be treated equally by the network operators on whose networks they operate. This, in essence, is a principle of network architecture: the Internet was designed to treat all data packets sent between nodes on the network equally without discriminating between packets. In times of network congestion—too many packets going through a router at once—packets simply would “wait in line.” As a consequence, most control of Internet traffic is located at the network’s ends—its users. Users initiate packet traffic, and the network itself is a passive conduit.¹³ While this so-called end-to-end principle is the result of technological

Frischmann & Barbara van Schewick, *Network Neutrality and the Economics of an Information Superhighway: A Reply to Professor Yoo*, 47 JURIMETRICS 383 (2007); C. Scott Hemphill, *Network Neutrality and the False Promise of Zero-Price Regulation*, 25 YALE J. ON REG. 135 (2008); Benjamin E. Hermalin & Michael L. Katz, *The Economics of Product-Line Restrictions with an Application to the Network Neutrality Debate*, 19 INFO. ECON. & POL’Y 215 (2007); Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925 (2001); Robert E. Litan & Hal J. Singer, *Unintended Consequences of Net Neutrality Regulation*, 5 J. ON TELECOMM. & HIGH TECH. L. 533 (2006); Moran Yemini, *Mandated Network Neutrality and the First Amendment: Lessons from Turner and a New Approach*, 13 VA. J.L. TECH. 1 (2008); Amit M. Schejter & Moran Yemini, “Justice and Only Justice, You Shall Pursue”: *Network Neutrality, the First Amendment, and John Rawls’s Theory of Justice*, 14 MICH. TELECOMM. TECH. L. REV. 137 (2007); J. Gregory Sidak, *A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet*, 2 J. COMPETITION L. & ECON. 349 (2006) (providing an overview of economic studies on network neutrality); Barbara van Schewick, *Towards an Economic Framework for Network Neutrality Regulation*, 5 J. ON TELECOMM. & HIGH TECH. L. 329 (2007) [hereinafter “Towards an Economic Framework”]; Philip J. Weiser, *The Next Frontier for Network Neutrality*, 60 ADMIN. L. REV. 273 (2008); Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1 (2005); Christopher S. Yoo, *Network Neutrality and the Economics of Congestion*, 94 GEO. L.J. 1847 (2006) [hereinafter “Economics of Congestion”]; Jay Pil Choi & Byung-Cheol Kim, *Net Neutrality and Investment Incentives* (CESifo Working Paper No. 2390, 2008), available at <http://ssrn.com/abstract=1264934>; Nicholas Economides & Joacim Tåg, *Net Neutrality on the Internet: A Two-Sided Market Analysis* (N.Y. Univ. Sch. of Law, Working Paper No. 07-40, 2007), available at <http://ssrn.com/abstract=1019121>; Christopher S. Yoo, *Network Neutrality, Consumers, and Innovation* (U. of Pa., Inst. for Law & Econ., Working Paper No. 08-23, 2008), available at <http://ssrn.com/abstract=1262845> [hereinafter “Network Neutrality, Consumers, and Innovation”]; Hsing Kenneth Cheng, Subhajyoti Bandyopadhyay & Hong Guo, *The Debate on Net Neutrality: A Policy Perspective* (forthcoming), available at <http://ssrn.com/abstract=959944>; Edward W. Felten, *Nuts and Bolts of Network Neutrality*, available at <http://itpolicy.princeton.edu/pub/neutrality.pdf> (giving an overview of the network neutrality debate in network engineering); Mark A. Jamison & Janice A. Hauge, *Getting What You Pay for: Analyzing the Net Neutrality Debate* (Working Paper, 2008), available at <http://ssrn.com/paper=1081690>.

13. David Isenberg, then at AT&T, in 1997 famously referred to the Internet as “dumb” in this matter. David Isenberg, *Rise of the Stupid Network*, COMPUTER TELEPHONY 16 (Aug. 1997); see also *Rise of the Stupid Network*, <http://isen.com/stupid.html> (Author provides links to article published on various Web sites.) (last visited Dec. 10, 2009).

developments in the initial stages of the Internet,¹⁴ it arguably also stems, to some extent, from early policy decisions by the FCC.¹⁵ Only the edges of the Internet were determined to be truly free from regulation by the FCC; hence, it was logical for innovation to take place there. In any case, the end-to-end principle has been defining the architecture of the Internet, and arguably constitutes the innovative character of the emergent Internet economy. The Organization for Economic Co-Operation and Development (OECD) reports that

Ebay, Yahoo, Google and Amazon were able to enter their respective markets on a scale that was not possible before the Internet. The Internet has reduced barriers to large-scale market entry in many consumer markets and this has increased competition and consumer welfare across sectors. Now, some commentators are worried that a multi-tiered structure would introduce a new barrier to entry and stifle innovation at the edges.¹⁶

Indeed, the end-to-end principle found its origins in the age of narrowband Internet, where most data packets are of approximately the same “weight” and timely delivery is not a necessity.¹⁷ The growth of broadband deployment, however, led to an increase in demand for high-bandwidth applications and services like streaming video, which is sensitive to delay.¹⁸ It is argued, therefore, that absolute end-to-end connectivity may no longer be the most ideal principle for network architecture in the era of broadband, since unconditional end-to-end routing does not allow for distinguished handling of packets that require specific treatment.¹⁹ This would urge for a closer inspection of data traffic, which would create a more active network. Reasonable network management may be required to facilitate functional Internet usage on congested broadband

14. See Sascha D. Meinrath & Victor W. Pickard, *The New Network Neutrality: Criteria for Internet Freedom*, 12 INT’L J. COMM. L. & POL’Y 225, 236 (2008); see generally J. H. Saltzer, D. P. Reed & D. D. Clark, *End-to-End Arguments in System Design*, 2 ACM TRANSACTIONS ON COMPUTER SYS. 277 (1984) (the seminal technical paper on end-to-end).

15. Particularly of interest here is the FCC’s distinction between “basic” and “enhanced” services as specified in *Computer Inquiry II*, which left the “enhanced” services unregulated. Amendment of Section 64.702 of the Comm’n’s Rules and Regs. (Second Computer Inquiry), *Final Decision*, 77 F.C.C.2d 384, 417-29 (May 2, 1980). This eventually resulted in the separation of “telecommunications” and “information” services in the 1996 Telecommunications Act. See generally Joshua L. Mindel & Marvin A. Sirbu, *Regulatory Treatment of IP Transport and Services*, in COMMUNICATIONS POLICY IN TRANSITION: THE INTERNET AND BEYOND 59-64 (Benjamin M. Compaine & Shane Greenstein ed., 2001).

16. Org. for Econ. Co-Operation and Dev., Working Party on Telecomm. and Info. Servs. Policies, *Internet Traffic Prioritisation: An Overview* 17 (Apr. 6, 2007).

17. See Christopher Yoo, *Would Mandating Broadband Network Neutrality Help or Hurt Competition? A Comment on the End-to-End Debate*, 3 J. ON TELECOMM. & HIGH TECH. L. 23, 30-34 (2004).

18. See, e.g., Crowcroft, *supra* note 12, at 574.

19. *Id.*

networks. In order to offer streamlined high-performance applications and services, it may be necessary to distinguish between packets of high and low priority,²⁰ and allocate bandwidth more actively in case of congestion. However, allowing (deep) packet inspection and treatment based on that inspection can be much more far reaching than simple network management. Packet inspection for network-management purposes can be easily expanded to increase control over Internet traffic for economic or moral reasons, and violate competition on markets and civil liberties.²¹ Indeed, the recent past has demonstrated that network operators have practiced unreasonable and disproportionate network management.²² Thus, a policy is needed to determine which forms of management are allowed on networks and which are not. A balance should be struck that allows the Internet to remain open while allowing network-management measures that ensure maximum quality of service (QoS).²³ This Article does not draw a binary opposition between network neutrality and network management, but places network neutrality on a continuum between reasonable and unreasonable network management.

A supposed optimal ratio between reasonable and unreasonable network management becomes more pertinent in relation to deployment of next-generation broadband infrastructures. Confronted with “digital divides” in knowledge economies, governments wish to push broadband deployment²⁴ in a largely deregulated telecommunications landscape. Governments want to incentivize network operators to roll out next-generation broadband infrastructures in previously underserved areas, preferably to develop these areas into a competitive broadband market.²⁵

20. See Felten, *supra* note 12, at 2-3; Jon M. Peha, *The Benefits and Risks of Mandating Network Neutrality, and the Quest for a Balanced Policy*, 1 INT’L J. COMM. 644, 644-659 (2007).

21. See generally Paul Ohm, *The Rise and Fall of Invasive ISP Surveillance*, 2009 U. ILL. L. REV. 1417, 1490 (2009) (discussing the relation between deep packet inspection and network neutrality); see also Rob Frieden, *Internet Packet Sniffing and its Impact on the Network Neutrality Debate and the Balance of Power between Intellectual Property Creators and Consumers* (Working Paper, 2007), available at <http://ssrn.com/abstract=995273>.

22. See Peter Svensson, *Comcast Blocks Some Internet Traffic*, ASSOCIATED PRESS, October 19, 2007.

23. For a more precise explanation of this balance, see JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET: AND HOW TO STOP IT* (2008).

24. Compare Lennard G. Kruger & Angele A. Gilroy, *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, CRS Report for Congress (Mar. 19, 2009) (discussing the U.S. digital divide), with European Commission Communication on Bridging the Broadband Gap, at 7-8, COM (2006) 129 final (discussing the European digital divide).

25. See, e.g., Eur. Comm’n on Competition, *Public consultations: Broadband Guidelines on the application EU state aid rules to public funding of broadband networks*, (May 19, 2009), available at http://ec.europa.eu/competition/consultations/2009_

These next-generation network operators, however, wish to recoup the tremendous fixed costs that come with infrastructure deployment through increased dominance over their own networks. As in any network industry, next-generation broadband networks are prone to network effects and falling into natural monopoly.²⁶ Telecommunications regulators are thus confronted with possibly conflicting policy goals of increasing broadband deployment and desiring competitive and nondiscriminatory usage of those networks.²⁷

At the same time, next-generation broadband is an emerging market, in which any regulatory intervention (or lack thereof), necessary or otherwise, can have a tremendous impact on the state of the market.²⁸ Emerging markets in general can be defined as having “a significant (above-average) degree of uncertainty about the evolution of future demand.”²⁹ More specifically, there are additional features that possibly can characterize emerging markets: first, emerging markets may be highly dependent on investment for dynamic efficiency; and, second, such markets may be more prone to the competitive harm of externalities such as network effects and switching costs.³⁰ These possible, additional characteristics of emerging markets do not necessarily apply to the same extent: some emerging markets may be generally uncertain, but more dependant on investment than vulnerable to externalities and vice versa.³¹

Intuitively, it seems plausible to assume that all aforementioned possible characteristics of emerging markets apply for the market of next-generation broadband infrastructures; naturally, there is great uncertainty about future (bandwidth) demand in broadband, which is subject to intense

broadband_guidelines/ (advising European member states on incentivizing broadband deployment without breaking European state-aid laws). For an English translation, see also Community Guidelines for the Application of State Aid Rules in Relation to Rapid Deployment of Broadband Networks, available at http://ec.europa.eu/competition/consultations/2009_broadband_guidelines/guidelines_en.pdf.

26. For an overview of the basic economic principles of network industries and broadband, see generally JONATHAN NUECHTERLEIN & PHILIP WEISER, *DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE* 3-22, 134-148 (2005). See also DANIEL F. SPULBER & CHRISTOPHER S. YOO, *NETWORKS IN TELECOMMUNICATIONS: ECONOMICS AND LAW* 348-355 (2009) (analyzing the role of network effects in broadband networks).

27. See, e.g., Ernst-Olav Ruhle & Wolfgang Reichl, *Incentives for Investments in Next Generation Access and Customer Choice: a Dichotomy?*, 44 *INTERECONOMICS* 30, 30-40 (2009) (providing a detailed description of the trade-off between fostering broadband deployment and a competitive broadband market).

28. Crocioni, *supra* note 7, at 502.

29. *Id.* at 497.

30. *Id.* at 498.

31. *Id.*

debate.³² Proponents of strict network neutrality regulation often stress the strong network effects in broadband markets,³³ while skeptics emphasize the need to allow incumbents to recoup their investments to safeguard innovation.³⁴ The assumption that all parameters of emerging markets apply to broadband, moreover, is echoed by a more or less neutral source—the OECD.³⁵

The desired balance between reasonable and unreasonable network management thus is troubled by potentially incompatible policy goals and a market of above-average uncertainty. Policy and regulation in network management is, therefore, not to be taken lightly, and seems to require a dynamic approach that pivots between the various difficulties of the broadband marketplace.

The debate on the appropriateness and feasibility of network management has taken place in the United States since the early twenty-first century, but has only recently emerged in Europe. In what follows, network neutrality shall be related to telecommunications policy in the United States and Europe.

32. For a detailed description of relevant issues in assessing future broadband demand, see *Economics of Congestion*, *supra* note 12, at 189-93. For the most conclusive research on the topic, see MINTS- Minnesota Internet Traffic Studies <http://www.dtc.umn.edu/mints/home.php> (last visited Dec. 10, 2009).

33. See, e.g., *Towards an Economic Framework*, *supra* note 12, at 329, 332.

34. See, e.g., *Network Neutrality, Consumers, and Innovation*, *supra* note 12.

35. See Org. for Econ. Co-Operation and Dev., *Broadband Growth and Policies in OECD Countries: Ministerial Background Report* (June 2008). The report stated the following:

Broadband operators face uncertainty as to how to recoup their large investments in the absence of new revenue-generating broadband services and content. Content providers are waiting for improved connectivity and content protection. These mutual uncertainties have the potential to slow down investment in higher-speed broadband networks and the generation of new broadband services.

Id. at 96. The report later also announced, “OECD countries emphasise research and innovation in the fields of broadband infrastructure (e.g. networks, connecting technologies, system support products and testing), related applications (especially in the wireless area), broadband-enabled public services, digital broadband content and even R&D focusing on new broadband business models.” *Id.* at 131. The OECD report also went into detail on the importance of competitive markets:

Maintaining a level-playing field and reducing anti-competitive practices in the face of high network effects and to promote consumer choice is crucial, i.e. in particular considering the increased use of walled garden approaches, as well as cross-industry mergers and acquisitions. With problems such as vertical integration, lock-in of consumers in certain standards, and poor access to certain content, an environment of contestable markets should be created where small and innovative players can compete.

Id. at 15.

III. EUROPEAN AND AMERICAN PATHS TO PRESENT-DAY TELECOMMUNICATIONS POLICY

A. *A Brief History of U.S. Network Management Regulation*

1. “The Past Is a Foreign Country”³⁶

In the course of the U.S. academic debate on network management and network neutrality, the history of U.S. telecommunications law has been described at such length that it can almost be deemed common knowledge.³⁷ However, since the fall of 2008, there has been an increase in development that has, so far, only sparsely been documented.³⁸ The Obama Administration has signaled a clear break with previous policy, and is currently in the process of revising regulatory oversight in telecommunications. Therefore, this Section will mainly focus on the most recent events in network-management policy, with special emphasis on the *Comcast* case,³⁹ the Recovery Act and the FCC’s Notice of Proposed Rulemaking on Preserving the Open Internet.⁴⁰

Many have remarked that telecommunications networks in the United States have traditionally been regulated under common carrier requirements.⁴¹ All services falling under Title II of the 1934 Communications Act were required, *ex ante*, to offer their services for a reasonable rate, at reasonable request, and without unreasonable price discrimination.⁴² These principles were more firmly established in the consent decree between the Department of Justice, Western Electric, and

36. L.P. HARTLEY, *THE GO-BETWEEN* 9 (1953).

37. See, e.g., Crawford, *supra* note 12, at 886-923.

38. Compare David L. Sieradzki & Winston J. Maxwell, *The FCC’s Network Neutrality Ruling in the Comcast Case: Towards a Consensus with Europe?*, COMM. & STRATEGIES, 4th Quarter 2008, at 73-88, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1374314 (discussing analogies between the FCC’s decision in *Comcast* and European policy), with Philip J. Weiser, *The Future of Internet Regulation* (Univ. of Colo. Law Legal Studies Research Paper Series, Working Paper No. 09-02, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1344757 (discussing the state of U.S. telecommunications policy after the *Comcast* decision).

39. See Formal Complaint of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, *Memorandum Opinion and Order*, *supra* note 1.

40. Preserving the Open Internet and Broadband Industry Practices, 74 Fed. Reg. 63,638 (Oct. 22 2009) (to be codified at 47 C.F.R. pt. 8).

41. See, e.g., Barbara Cherry, *Misusing Network Neutrality to Eliminate Common Carriage Threatens Free Speech and the Postal System*, 33 N. KY. L. REV. 483 (2006); Crawford, *supra* note 12, at 878-84.

42. 47 U.S.C. § 201(a)-(b) (2006).

AT&T,⁴³ the three consecutive *Computer Inquiries*,⁴⁴ and eventually the Telecommunications Act of 1996, which distinguished “information services” (Title I) from “telecommunications services” (Title II).⁴⁵ The crucial difference between Titles I and II was that the latter covered mere transmission of signals (without modifying content) and was subject to common carriage requirements.⁴⁶

The Supreme Court’s decision in *Brand X*,⁴⁷ and the subsequent *Wireline Broadband Order* by the FCC,⁴⁸ determined that both cable and DSL Internet services were subject to regulation as Title I (information services) under the Telecommunications Act, instead of under Title II. This Title I authority exempts cable and DSL operators from common carrier requirements under Title II; thus, network operators are not forbidden from implementing network-management practices that would constitute unreasonable discrimination under Title II.⁴⁹ These actions marked a departure from sector-specific regulation into broad, ex post enforcement, which falls outside of the FCC’s hands. Aware of this situation, the FCC drafted a loosely formulated set of ex ante policy principles urging reasonable and nondiscriminatory behavior by network operators.⁵⁰

43. *United States v. Western Elec. Co.*, 1956 Trade Cas. (CCH) ¶ 68, 246 (D.N.J. Jan. 24, 1956).

44. *See* Regulatory and Policy Problems Presented by the Interdependence of Computer and Commc’n Servs. & Facilities, *Tentative Decision*, 28 F.C.C.2d 291, para. 16-17 (1970); *modified by Final Decision and Order*, 28 F.C.C.2d 267, 21 Rad. Reg. 2d (P&F) 1591 (1971); Amendment of Section 64.702 of the Comm’n’s Rules and Regulations (Second Computer Inquiry), *supra* note 15, at para. 1; Amendment of Sections 64.702 of the Comm’n’s Rules and Regulations (*Third Computer Inquiry*), *Report and Order*, 104 F.C.C.2d 958 (June 16, 1986), 60 Rad. Reg. 2d (P&F) 603 (1986), *modified by* Amendment of Sections 64.702 of the Comm’n’s Rules and Regulations (*Third Computer Inquiry*), *Memorandum Opinion and Order on Reconsideration*, 2 F.C.C.R. 3035 (1987).

45. 47 U.S.C. § 153 (2007).

46. *See* Crawford, *supra* note 12, at 896-98.

47. *Nat’l Cable & Telecomm. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967, 996 (2005).

48. Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Report and Order and Notice of Proposed Rulemaking*, 20 F.C.C.R. 14853 (2005) [Hereinafter “Wireline Broadband Order”].

49. *Cf.* Crawford, *supra* note 12, at 907.

50. The policy principles are as follows:

To encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet, [1] consumers are entitled to access the lawful Internet content of their choice. . . . [2] consumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement. . . . [3] consumers are entitled to connect their choice of legal devices that do not harm the network. . . . [4] consumers are entitled to competition among network providers, application and service providers, and content providers.

Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Policy Statement*, 20 F.C.C.R. 14986, para. 4 (2005) (emphasis omitted).

2. Present Developments: *Comcast* and the Recovery Act

A fierce debate subsequently erupted as to whether or not the policy principles were actually enforceable.⁵¹ This debate was triggered by the infamous *Comcast* case, in which cable operator Comcast allegedly blocked peer-to-peer (P2P) protocol traffic on its network, regardless of the lawful or unlawful status of that P2P traffic.⁵² The FCC eventually determined that it had the jurisdictional authority under Title I of the Communications Act to disapprove of Comcast's discriminatory practices.⁵³ Comcast decided to bring a lawsuit contesting the FCC's reasoning, which at the moment of writing is still pending in the D.C. Circuit.⁵⁴

The *Comcast* case is remarkable in that the very same FCC administration that was the force behind *Brand X*—which effectively deregulated pressing ex ante provisions on broadband networks⁵⁵—seemed to have had a change of heart and determined that an arguably rhetorical set of policy principles that would undercut *Brand X* was enforceable on an ex ante basis after all. In the end, the FCC's deregulatory approach, which was forcefully endorsed with *Brand X*, is under debate again,⁵⁶ and might well tilt back towards sector-specific, ex ante regulation of broadband networks. This has become more likely with a new administration in office.

51. *Compare Broadband Industry Practices*, WC Docket No. 07-52, *Petition to Establish Rules Governing Network Management Practices by Broadband Network Operators of Vuze, Inc.* (2007) (urging the FCC to codify more strongly and subsequently enforce the Policy Principles against alleged unreasonable network management), and *Comment Sought on Petition for Rulemaking to Establish Rules Governing Network Management Practices by Broadband Network Operators*, *Public Notice*, 23 F.C.C.R. 343 (January 14, 2008) (FCC opens formal comment process on the enforceability of the Policy Principles), *with* *Comments of Hands Off the Internet*, FCC WC Docket No. 07-52 (received Feb. 13, 2008).

52. See Peter Svensson, *Comcast Blocks Some Internet Traffic*, ASSOCIATED PRESS (Oct. 19, 2007) (discussing the Formal Compl. of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer App'ns, Nov. 1, 2007).

53. See Formal Complaint of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, *Memorandum Opinion and Order*, *supra* note 1.

54. *Comcast Corp. v. FCC*, No. 08-1291 (D.C. Cir. Sept. 4, 2008).

55. For an apt observation of the FCC's deregulatory agenda, see Justice Scalia's dissenting opinion in *Nat'l Cable & Telecomm. Assoc. v. Brand X Internet Servs.*: "Actually, in these cases, it might be more accurate to say the Commission has attempted to establish a whole new regime of *non*-regulation, which will make for more or less free-market competition, depending upon whose experts are believed." 545 U.S. 967, 1005 (Scalia, J., dissenting) (emphasis in original).

56. See, e.g. Formal Complaint of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, *Memorandum Opinion and Order*, *supra* note 1, FCC Notice of Proposed Rulemaking on Preserving the Open Internet, *supra* note 40.

On the campaign trail, then-Democratic presidential candidate Barack Obama stated that he would take “a back seat to no one in [his] commitment to network neutrality.”⁵⁷ As president, Obama has underscored his commitment to network neutrality and broadband deployment in the Recovery Act.⁵⁸ The much-contested American Recovery and Reinvestment Act⁵⁹ was drafted in response to the financial crisis of fall 2008 as an attempt to jump start the U.S. economy by boosting federal spending. The Recovery Act provides funding opportunities for a plethora of infrastructure projects, including deployment of broadband infrastructure in rural and underserved areas.⁶⁰ Part of the broadband stimulus money attempts to strengthen the existing Rural Utilities Service,⁶¹ which is of little interest to this Article. More interesting is the BTOP Program.⁶²

The aims of the BTOP include providing and improving broadband access in underserved areas; providing broadband education and training to educational institutions, libraries, community support organizations, and outreach organizations that assist low-income, aged, unemployed, or otherwise “vulnerable populations”; improving use of broadband service by public-safety agencies; and stimulating economic growth.⁶³ The BTOP is to be administered jointly by the FCC and the National Telecommunications and Information Administration (NTIA).⁶⁴ Applicants can apply for a grant to pursue the above-mentioned goals and, in doing so, will be subject to contractual conditions of nondiscrimination as well as interconnection requirements.⁶⁵ These requirements, crucially, will *at least* consist of the four principles of the FCC’s Policy Statement.⁶⁶ Therefore, for all new broadband infrastructure developed under the BTOP, the Policy Statement will apply as a bottom line on an *ex ante* basis. This seems to imply that

57. Barack Obama: On Net Neutrality (Nov. 14, 2007), *available at* <http://www.youtube.com/watch?v=g-mWlqccn8k> (replaying a speech before Google employees in Mountain View, Calif., Nov. 2007).

58. Recovery Act, Pub. L. No. 111-5, 123 Stat. 115 (2009). Congress has followed suit by reintroducing a network neutrality bill. *See* Internet Freedom Preservation Act of 2009, H.R. 3458, 111th Cong. (2009).

59. Recovery Act, Pub. L. No. 111-5, 123 Stat. 115.

60. For a helpful guide through the broadband related parts of the American Recovery and Reinvestment Act, see S. Derek Turner, *Putting the Angels in the Details: A Roadmap for Broadband Stimulus Success* (2009), *available at* http://www.freepress.net/files/Angels_in_the_Details.pdf.

61. 7 C.F.R. § 1738.1-1739 (2007).

62. Recovery Act, Title VI § 6001.

63. *Id.* at § 6001(b).

64. *Id.* at § 6001.

65. *Id.*

66. *Id.* at § 6001(j); Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Policy Statement*, *supra* note 50, at para. 4.

network operators will have to give equal access to all content and service providers operating on their network, so that end users have access to “the lawful Internet content of their choice.”⁶⁷

Besides these obligations for applicants, the BTOP also requires the FCC to submit a “national broadband plan” to the appropriate House and Senate committees within a year of enactment of the Recovery Act.⁶⁸ The ambitious goal of this plan is to “seek to ensure that all people of the United States have access to broadband capability and shall establish benchmarks for meeting that goal.”⁶⁹ Moreover, the Act prescribes that the FCC analyze the most effective and efficient way to achieve this goal, strive for affordability of the offered broadband services, and continue to monitor actual broadband deployment under the BTOP.⁷⁰

Moreover, the FCC instantiated by the Obama Administration has initiated a formal rulemaking process with the intent to formally codify a rewritten version of the *Policy Statement*.⁷¹ The proposed rules add two additional principles of non-discrimination⁷² and transparency,⁷³ while explicitly making the by-now six policy principles subject to “reasonable network management.”⁷⁴ While the rulemaking process is still in its early

67. *Id.* at para. 4.

68. Recovery Act § 6001(k)(1).

69. *Id.* at § 6001(k)(2).

70. *Id.* at § 6001(k)(2)(A)-(C).

71. See FCC Notice of Proposed Rulemaking on Preserving the Open Internet, *supra* note 40. For *Policy Statement*, see *supra* note 50.

72. See FCC Notice of Proposed Rulemaking, Draft Proposed Rules for Public Input, §8.13, *supra* note 40: “[A] provider of broadband Internet access service must treat lawful content, applications, and services in a nondiscriminatory manner.”*Id.*

73. *Id.* at §8.14: “[A] provider of broadband Internet access service must disclose such information concerning network management and other practices as is reasonably required for users and content, application, and service providers to enjoy the protections specified in this part.”*Id.*

74. *Id.* at §8.3:

Reasonable network management consists of:

(a) reasonable practices employed by a provider of broadband Internet access service to:

- (i) reduce or mitigate the effects of congestion on its network or to address quality-of-service concerns;
- (ii) address traffic that is unwanted by users or harmful;
- (iii) prevent the transfer of unlawful content; or
- (iv) prevent the unlawful transfer of content; and

(b) other reasonable network management practices.

The FCC motivates the catch-all category under (b) as follows:

First, we do not presume to know now everything that providers may need to do to provide robust, safe, and secure Internet access to their subscribers, much less everything they may need to do as technologies and usage patterns change in the future. Second, we believe that additional flexibility to engage in reasonable network management provides network operators with an important tool to experiment and innovate as user needs change.

stages, it seems that much of the effectiveness of the proposed rules and the FCC's clout in enforcing these will depend on how "reasonable network management" will be further defined as the drafting process develops. In any event, the FCC's proposal to formally codify the extended Policy Principles suggests that the FCC is intent to preempt the outcome of *Comcast v. FCC*⁷⁵ on the enforceability of the original *Policy Statement*, and increase regulatory oversight on the broadband market.

The policy shifts in broadband during and in between the present and past administrations suggest a trial-and-error policy between categorical approaches, subject to a high degree of institutional learning.⁷⁶ After a tradition of common carriage in telecommunications, broadband was heavily deregulated—supposedly to stimulate incumbents' investment into broadband infrastructure deployment.⁷⁷ With U.S. broadband deployment lagging behind other developed countries⁷⁸ and a new administration in office, emphasis has shifted again to increased regulation, as evidenced by the BTOP and the FCC's Proposed Rulemaking. Without speaking out in favor of either of these policies, it seems reasonable to state that *any* categorical approach refutes the status of broadband as a complex and uncertain market. As will be described in Section III of this Article, an optimal broadband policy allows regulation to pivot between spurring investment and dealing with externalities in a systematic and flexible mechanism.

Even though the BTOP is administered by the NTIA and FCC, drafting the broadband plan offers the FCC unprecedented authority to outline policy for broadband deployment, including a detailed policy on network neutrality. Network-management policy in broadband markets is a daunting endeavor because of the potentially conflicting policy goals of incentivizing infrastructure investment and developing a competitive market—all of which happens in an environment of above-average uncertainty. The FCC has a rare opportunity to pursue such a daunting

See FCC Notice of Proposed Rulemaking on Preserving the Open Internet, *supra* note 40, at §140

75. *Comcast Corp. v. FCC*, No. 08-1291 (D.C. Cir. Sept. 4, 2008).

76. See Johannes M. Bauer & Erik Bohlin, From Static to Dynamic Regulation: Recent Developments in US Telecommunications Policy, 43 *INTERECONOMICS* 38, 50 (2008).

77. See FCC *Wireline Broadband Order*, *supra* note 48, at §3:

We are confident that the regulatory regime we adopt in this Order will promote the availability of competitive broadband Internet access services to consumers, via multiple platforms, while ensuring adequate incentives are in place to encourage the deployment and innovation of broadband platforms consistent with our obligations and mandates under the [Telecommunications] Act. *Id.*

78. For a detailed report on decreasing growth in U.S. broadband deployment, see, for example, S. Derek Turner, *America's Broadband Reality Check II: The Truth Behind America's Digital Decline* (2006), available at <http://www.freepress.net/files/bbrc2-final.pdf>.

strategy and develop a comprehensive network-management policy in the United States. With this opportunity comes a great responsibility, which requires the FCC to be systematic yet flexible and, above all, transparent in drafting and implementing its national broadband plan.⁷⁹

Section III of this Article will offer recommendations on how to develop a comprehensive network-management policy based on analytical research and European precedent. European telecommunications regulation will be dealt with at length, since little research has been conducted on EU telecommunications policy from a U.S. perspective, and only scarce literature is available on how EU telecommunications regulation relates to issues in network neutrality and next-generation broadband deployment.

B. European Telecommunications Regulation and Network Management

1. The Long Road to Open Markets

The European telecommunications market traditionally consisted of a series of national monopolies held by incumbent state-owned operators.⁸⁰ By the late 1980s, the European Commission proposed a two-way strategy, which included (1) liberalizing and privatizing the telecommunication markets of individual member states and (2) creating a harmonized European internal marketplace for telecommunications.⁸¹ What followed was a deregulation of the sector, which allowed for further convergence of media and telecommunications and effective competition.⁸²

Thus, the European Commission drafted a completely new regulatory framework that was designed according to five main principles.⁸³ The

79. Initial reports indicate that the FCC is taking this role very seriously, as evidenced by the new Web portal, which includes a countdown timer. Welcome to Broadband.gov, <http://www.broadband.gov>.

80. See, e.g. Christian Koenig, Andreas Bartosch, Jens-Daniel Braun, EC Competition and Telecommunications Law 51 (Kluwer Law International 2002).

81. A 1988 directive introducing competition in national telecom markets was the first directive pursuant of this dual strategy and, with that, the very first European Economic Community telecommunications law. See 1988 O.J. (L 131) 73-77.

82. See Commission Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation, COM (1997) 623 (Dec. 3, 1997).

83. *Id.* These five principles are the following:

(1) Regulation should be limited to what is strictly necessary to achieve clearly identified objectives. . . . (2) Future regulatory approaches should respond to the needs of users. . . . (3) Regulatory decisions should be guided by a need for a clear and predictable framework. . . . (4) Ensuring full participation in a converged environment. . . . (5) Independent and effective regulators will be central to a converging environment.

Id. at 33.

framework contained three legal instruments—antitrust law, binding sector-specific regulation, and additional nonbinding sector-specific measures,⁸⁴ which were implemented in six directives.⁸⁵ This regulatory framework eventually was enacted in 2002, and has been under review since 2007.⁸⁶

The 2002 framework, in its broadest terms, can be characterized by three foundational strategies, of which the first two are closely related: (1) deregulation through decreasing ex ante regulation, (2) new regulation premised on the existence of significant market power (SMP), and (3) the principle of technological neutrality.⁸⁷ The strategies of decreased ex ante regulation and SMP identification, especially, testify to the general market-based approach that the European Commission has adopted for telecommunications policy.⁸⁸ This market-oriented strategy has proven generally to be successful in many EU countries, where competition

84. Antitrust law, naturally, was already in force outside of telecommunication-specific regulation, and it is not by coincidence that the framework has been built on top of forty years of jurisdiction in European antitrust law; this would underscore the general deregulatory and market-based approach in the new framework. See Alexandre de Streel, *The Integration of Competition Law Principles in the New European Regulatory Framework for Electronic Communications*, 26 *WORLD COMPETITION* 489, 489-514 (2003); see also PIERRE LAROUCHE, *COMPETITION LAW AND REGULATION IN EUROPEAN TELECOMMUNICATIONS* (2000) (providing a detailed explanation of European Union antitrust law in relation to telecommunications).

85. For a helpful scheme illustrating how directives coalesce, see Communication from the Commission Towards a New Framework for Electronic Communications Infrastructure and Associated Services, at 18 COM (1999) 539 final. The overarching Framework Directive outlines the relationship between the whole framework and National Regulatory Authorities (NRAs) and balances the four underlying directives. See Council Framework Directive 2002/21/EC, art. 251, 2002 O.J. (L 108) 33 [hereinafter “Framework Directive”]; see Council Access Directive 2002/19/EC, art. 95, 2002 O.J. (L 108) 7 [hereinafter “Access Directive”] (concerning interconnection and accessibility of communication networks); see Council Authorisation Directive 2002/20/EC, art. 251, 2002 O.J. (L 108) 21 [hereinafter “Authorisation Directive”] (codifying licensing and resource management); see Council Directive 2002/22/EC, art. 251, 2002 O.J. (L 108) 51 [hereinafter “Universal Service Directive”] (ensuring universal access and consumer rights); see Council Directive 2002/58/EC, art. 251, 2002 O.J. (L 201) 37 [hereinafter “ePrivacy Directive”] (protecting privacy rights).

86. See Press Release, European Commission, Commission proposes a single European Telecoms Market for 500 million consumers (Nov. 13, 2007) available at <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1677&format=PDF&aged=1&language=EN&guiLanguage=en>.

87. See Joshua Mindel & Douglas Sicker, *Leveraging the EU Regulatory Framework to Improve a Layered Policy Model for US Telecommunications Markets*, 30 *TELECOMM. P’CY* 136, 137 (2006).

88. This latter parameter of technological neutrality will not be discussed at length in the present Article. For a detailed study on the matter, see ILSE MARTHE VAN DER HAAR, *THE PRINCIPLE OF TECHNOLOGICAL NEUTRALITY: CONNECTING EC NETWORK AND CONTENT REGULATION* (2008).

between numerous operators has led to lower prices and an increase in both the number and speed of broadband connections.⁸⁹

The general premise behind the 2002 framework was that, in order to build and sustain a competitive telecom market in the EU, as much regulation as possible should be replaced by ex post application of antitrust law.⁹⁰ Only when markets are considered insufficiently competitive is sector-specific regulation justified—and only until these markets become sufficiently competitive.⁹¹ The Framework Directive requires the European Commission to draft a recommendation with and for Member States' independent NRAs.⁹² This recommendation is supposed to support a process of market analysis by NRAs to determine whether or not, in eligible markets,⁹³ firms enjoy SMP.⁹⁴ If market power is detected, NRAs are directed to Article 8.2 of the Access Directive, which enables the NRA to impose measures as diverse as obligatory transparency,⁹⁵

89. See, for instance, the OECD historical broadband penetration rates in countries like Finland and the Netherlands. OECD Broadband Portal, <http://oecd.org/sti/ict/broadband>; see also OECD, BROADBAND GROWTH AND POLICIES IN OECD COUNTRIES 24 (2008).

90. Cf. *Framework Directive*, *supra* note 85, at para. 27 (“It is essential that *ex ante* regulatory obligations should only be imposed where there is not effective competition, i.e. in markets where there are one or more undertakings with significant market power, and where national and Community competition law remedies are not sufficient to address the problem.”).

91. See, e.g., Comm’n Recommendation 2003 O.J. (L 114) 45, 45-47.

92. The independence of NRA’s from governments is established in the Framework Directive. *Framework Directive*, *supra* note 85, at para. 11.

93. The European Commission generally favors the regulation of wholesale markets over retail markets because the latter’s level of competition is deemed to be mainly dependent on the competitiveness of the former market. See *Framework Directive*, *supra* note 85, at para. 26.

94. See *Framework Directive*, *supra* note 85, at arts. 15.1, 16.4. See also 2003 O.J. (L 114) 45, *supra* note 91, at para. 16. This explanatory memorandum accompanying the recommendation offers a three-fold, cumulative scale to be used when assessing supposed SMP in telecom markets. First, it is to be identified whether a particular market is subject to “high and non-transitory entry barriers” for market entrants. *Id.* at para. 9. These barriers occur when incumbent operators impose asymmetrical conditions amongst market entrants on their network, or when required interconnection to complete a service is being hindered. The second—much less clearly defined—criterion is whether the market under suspicion is dynamic in such a way that it independently will tend toward effective competition over time. *Id.* This condition would apply in cases of fluctuating market shares and a high level of innovation—both characteristics of developing markets. The final criterion questions whether antitrust is sufficient to deal with the first two criteria. *Id.* After all, ex-ante regulation is only supposed to complement existing antitrust law.

95. See *Access Directive*, *supra* note 85, art. 9.

nondiscrimination,⁹⁶ accounting separation,⁹⁷ open access,⁹⁸ and price control.⁹⁹

Thus, the 2002 framework operates through an elaborate mechanism of SMP identification to determine whether a specific market should be subject to sector-specific regulation. Only then are the framework's strongest tools for regulatory intervention enforceable, and only until the market in question becomes competitive again. One of the provisions of the framework requires that the functioning of individual Directives be reviewed periodically, ensuring that regulation keeps up with technological development.¹⁰⁰

2. European Telecoms Under Review

As technological progress and convergence have proceeded, the European Commission has signaled the need to update the regulatory framework in its entirety,¹⁰¹ stating that the European telecom market is still too fragmented to represent an internal, open marketplace.¹⁰² The proposed new framework is a significant revision of the 2002 original. Its direction could be interpreted as somewhat double sided because it grants more independent regulatory power to NRAs while, at the same time, attempting to strengthen the European Commission's authority.¹⁰³

What followed by the end of 2008 was back-and-forth¹⁰⁴ legislative drafting between the European Parliament,¹⁰⁵ the European Commission,¹⁰⁶

96. *Id.* at art. 10.

97. *Id.* at art. 13.

98. *Id.* at art. 12.

99. *Id.* at art. 13.

100. See *Framework Directive*, *supra* note 85, art. 25. For the European Commission's latest review of the Framework Directive, based on public consultation, see *Commission Communication on the Review of EU Regulatory Framework for Electronic Comm. Networks and Servs.*, at 3, COM (2006) 334 final [hereinafter "Review of EU Regulatory Framework"].

101. See Proposal for a Directive of the European Parliament and of the Council Amending Directives 2002/21/EC on a Common Regulatory Framework for Electronic Comm. Networks and Services, COM (2007) 697 final; Proposal for a Directive of the European Parliament and of the Council Amending Directive 2002/22/EC on Universal Serv. and Users' Rights Relating to Electronic Comm. Networks, COM (2007) 698 final.

102. See European Commission Information Society, *Reforming the Current Telecom Rules*, available at http://ec.europa.eu/information_society/policy/ecommm/tomorrow/index_en.htm.

103. While the European Commission intends to grant NRAs more authority to enforce structural separation of telecommunications operators, it has also proposed to let the European Commission have veto power in NRA's market definition. Further, the European Commission wants to introduce a pan-European telecommunications regulator. See Impact Assessment, Commission Staff Working Document, PARL. EUR. DOC. (SEC 2007) 1472.

104. There are a great variety of legislative procedures in the EU, drawing on different power relations between Commission, Council, and Parliament. Drafting a new

the European Council,¹⁰⁷ and again the European Parliament.¹⁰⁸ Disagreement among the three legislative branches concentrated on the possible codification of veto power for the European Commission, the enforcement of functional separation as a regulatory tool, and the legitimacy of the pan-European telecommunications regulator. However, a discussion on network neutrality led to unusual bickering between the European Parliament and Council. A row between the two institutions brought the negotiations process to conciliation committee, postponing adoption of the new telecommunications package until late 2009.¹⁰⁹ The next Section shall address how the new European regulatory framework relates to network neutrality, and how network neutrality became a divisive issue in the drafting process of the new framework.

3. Network Neutrality Under the New Framework

The European Commission has followed the discussion on network neutrality in the United States closely and has attempted to develop a policy that translates network neutrality issues to the European market.¹¹⁰

telecommunications framework goes according to the so-called “co-decision procedure,” which is arguably the most transparent and democratic procedure available. *See* PAUL CRAIG & GRÁINNE DE BÚRCA, *EU LAW: TEXT, CASES AND MATERIALS*, 109-118 (4th ed. 2008).

105. *See* Proposal for a Directive of the European Parliament on a Common Regulatory Framework for Electronic Comm. Networks and Servs., COM (2007) 697 (Nov. 13, 2007); Proposal for a Directive of the European Parliament Amending Directive 2002/22/EC on Universal Serv. and Users’ Rights Relating to Electronic Comm. Networks, COM (2007) 698 final (Nov. 13, 2007).

106. *See* Amended Proposal for a Directive of the European Parliament Amending Directives 2002/21/EC on a Common Regulatory Framework for Electronic Comm. Networks and Servs., COM (2008) 724 final (Nov. 6, 2008); Amended Proposal for a Directive of the European Parliament and of the Council Amending Directive 2002/22/EC on Universal Serv. and Users’ Rights Relating to Electronic Comm. Networks, COM (2008) 723 final (Nov. 6, 2008).

107. *See* Council Common Position (EC) No. 16496/2008 of 9 Feb. 2009, art. 251; Council Common Position (EC) No. 16497/2008 of 9 Feb. 2009, art. 251.

108. *See* Recommendation for Second Reading on the Council Common Position for Adopting a Directive of the European Parliament and of the Council Amending Directives 2002/21/EC on a Common Regulatory Framework for Electronic Comm. Networks and Servs., PARL. EUR. DOC. A6-0272 (SEC 2009) [hereinafter “PARL. EUR. DOC. A6-0272”]; Recommendation for Second Reading on the Council Common Position for Adopting a Directive of the European Parliament and of the Council Amending Directives 2002/22/EC on Universal Serv. and Users’ Rights Relating to Electronic Comm. Networks, PARL. EUR. DOC. A6-0257 (SEC 2009).

109. As of November 5, 2009 there appears to be agreement between the European Institutions about the new regulatory framework, although no definitive draft has been released yet. *See* EurActiv.com, *EU telecoms reform package agreed*, available at <http://www.euractiv.com/en/infosociety/eu-telecoms-reform-package-agreed/article-187064?Ref=RSS>.

110. In the European Commission’s wake, European academics have focused their studies on network neutrality. *See generally* Martin Cave & Pietro Crocioni, *Does Europe*

The European Commission has framed network neutrality explicitly in relation to the development of next-generation broadband infrastructure.¹¹¹ This is very much in line with the overall market-based approach that the European Commission has advocated in its past telecommunications policies.¹¹² At the outset, the European Commission acknowledged the delicacy of regulating next-generation infrastructures, specifically, the complexity of balancing—under conditions of above-average uncertainty—the potential conflict between incentivizing investment in broadband and fostering competition.¹¹³ Under these circumstances, a middle ground for future policy is proposed by the European Commission that opts for neither complete open access to next-generation networks, nor grants operators so-called regulatory holidays on next-generation infrastructures.¹¹⁴ Rather, the European Commission intends to maintain and further develop the SMP mechanism of the existing regulatory framework: antitrust law triggers regulatory intervention in cases of demonstrated market failure, and all intervention is lifted once markets become competitive again.¹¹⁵ However, given the strong network effects of next-generation infrastructures, NRAs

Need Network Neutrality Rules?, 1 INT'L J. COMM. 669 (2007); Filomena Chirico, Ilse van der Haar & Pierre Larouche, *Network Neutrality in the EU* (TILEC Discussion Paper No. DP2007-030, 2007), available at <http://ssrn.com/abstract=1018326>; Viktória Kocsis & Paul W. J. de Bijl, *Network Neutrality and the Nature of Competition Between Network Operators*, 4 INT'L ECON'S & ECON. POL'Y 159 (2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=976882; Christopher T. Marsden, *Net Neutrality: the European Debate*, J. INTERNET L., Aug. 2008, at 1, 7-16; Christopher T. Marsden, *Net Neutrality 'Lite': Regulatory Responses to Broadband Internet Discrimination* (2009), available at <http://ssrn.com/abstract=1330747>; Andrea Renda, *I Own the Pipes, You Call the Tune: The Net Neutrality Debate and its (Ir)relevance for Europe* (2008), available at http://shop.ceps.be/downfree.php?item_id=1755; Peggy Valcke, et al., *Guardian Knight or Hands Off: The European Response to Network Neutrality: Legal Considerations on Electronic Communications Reform*, 72 COMM. & STRATEGIES 89 (2008).

111. See Impact Assessment, *supra* note 3, at 18-47.

112. *Id.* at 39-42.

113. *Id.* at 27.

In policy terms, the issue is to strike a regulatory balance between, on the one hand, allowing incentives for investors in new core and access networks – in the face of considerable uncertainty over the evolution of demand for these services – and, on the other hand, avoiding the immediate foreclosure of new markets by sanctioning the reassertion of monopoly privileges by the dominant market players over these new infrastructures. *Id.*

114. See *id.* at 46: “A combination of infrastructure competition and regulation seems to produce the highest national broadband penetration rates.” *Id.*

115. *Id.*, at 40: “Maintaining the current regulatory framework (Option 3) provides continuity and the opportunity to build on existing achievements.”; *id.* at 47:

The Commission therefore considers that a modified Option 3 is the most appropriate option. The modification would be to add mandatory functional separation ... as an exceptional measure available in the NRA's regulatory toolbox.” *Id.*

can, as a measure of last resort, functionally separate incumbent companies.¹¹⁶

With this in mind, the European Commission's stance on network management is much less articulated. Network neutrality is regarded as mainly a U.S. problem,¹¹⁷ and it is argued that the market in general is sufficiently competitive to solve unreasonable network management so that consumers who are unhappy with the discriminatory practices of their Internet Service Provider (ISP) can easily switch to an ISP that does not discriminate.¹¹⁸ In cases of unacceptable degradation of services and the blocking of lawful content, antitrust law and the regulatory framework are held to be appropriate remedies.¹¹⁹ This is supplemented with consumer-protection measures, which impose transparency on network operators to disclose their network-management policies.¹²⁰

The European Parliament has been more active on network neutrality since reviewing the European Commission's proposals, and has moved toward increased regulation that bans access restrictions on end users.¹²¹ This has caused a dispute between the European Parliament and the Council of Ministers, the latter of which strongly opposed the proposed regulatory measures and deleted such amendments in its own amendments

116. *Impact Assessment*, *supra* note 3, at 28-47. Functional separation is a lighter version of structural separation in which the incumbent's next-generation network is turned into an operationally separate entity, yet acts under the ownership of the parent company. *Id.* at 29.

117. See Commission Staff Working Document on the Review of the EU Regulatory Framework for Electronic Comm. Networks and Servs., PARL. EUR. DOC. (SEC 2006) 816 (2006) at 26.

118. See *Impact Assessment*, *supra* note 3, at 91.

119. *Id.*; *cf.* Wong & Garrie, *supra* note 5, at 325-331 (providing a detailed account of how the 2002 European framework would deal with network neutrality concerns).

120. Network operators are required to inform their customers of any access limitations in advance of the conclusion of a contract and regularly thereafter. This measure of transparency should encourage users to switch ISPs when they are unsatisfied with any (lawful) discriminatory activities. See *Proposal for a Directive of the European Parliament and of the Council Amending Directive 2002/22/EC on Universal Serv. and Users' Rights Relating to Electronic Comm. Networks*, COM (2007) 699 final (Nov. 13, 2007); *Impact Assessment*, *supra* note 3, at 95-96.

121. This came to the forefront most clearly in the by-now infamous amendment 138, stating that

no restriction may be imposed on the fundamental rights and freedoms of end-users, without a prior ruling by the judicial authorities, notably in accordance with Article 11 of the Charter of Fundamental Rights of the European Union on freedom of expression and information, save when public security is threatened in which case the ruling may be subsequent.

(internal quotations omitted). PARL. EUR. DOC. A6-0321/138 (2008). This amendment is striking since it takes network neutrality out of the European Commission's strict economic context and into European Fundamental Rights such as Freedom of Expression. *Id.*

to the bill.¹²² Because the European Parliament subsequently reintroduced its network neutrality amendment in its second reading of the bill,¹²³ both institutions were forced into a conciliation procedure, postponing adoption of a new regulatory framework for telecoms until an agreement is reached.¹²⁴

The contours of the definitive new regulatory framework seem to be agreed upon while an agreement is all but finalized.¹²⁵ Concerning network neutrality, the legislative procedure of the framework evidenced a cautious approach by the European institutions. Communication by the European Council and the European Commission suggests that European policymakers are uncertain whether network neutrality is or will become an issue on the European market, or whether it is not (yet) enough of an issue to put the SMP-centered regulatory approach under discussion in telecoms.¹²⁶ Thus, network neutrality is dealt with in terms of the existing procedure of the regulatory framework, in which regulatory action is taken only in cases of SMP. European regulators have chosen to take this wait-and-see approach, apparently arguing that, for now, antitrust law and the regulatory framework are sufficiently robust to deal with future network neutrality issues.

A practical result of the upcoming revised version of the European regulatory framework for telecommunications is that, through the bickering between the European Commission and Parliament on one side and the Council of Ministers on the other, little effort has been put into harmonizing network management for the internal market. As such, network neutrality will be approached as a matter of consumer protection.¹²⁷

122. See *Council Common Position*, *supra* note 107; Directive 2002/21/EC, OJ L 108 (24.4.2002).

123. See PARL. EUR. DOC. A6-0272, *supra* note 108, at 28; Press Release, European Parliament, No Agreement on Reform of Telecom Legislation (May 6, 2009), *available at* http://www.europarl.europa.eu/pdfs/news/expert/infopress/20090505IPR55085/20090505IPR55085_en.pdf.

124. See Presidency Press Statement on the State of Play Regarding the 'Telecoms Package,' Council of the European Union (June 11, 2009), *available at* http://www.eu2009.cz/en/news-and-documents/news/presidency-press-statement-on-the-state-of-play-regarding-the-telecoms-package_-25123/.

125. See *supra* note 109.

126. See Wong & Garrie, *supra* note 5, at 332 ("The prevailing view is that the existing European legislative framework is sufficient to deal with conflicts arising between network and cable providers and therefore, does not necessitate the types of regulations anticipated in the United States.").

127. PARL. EUR. DOC. A6-0321/138, *supra* note 121.

The European framework offers a rich suite of tools for regulatory intervention on telecom markets that are not sufficiently competitive.¹²⁸ While these measures are all adequate methods to discipline network operators who violate network neutrality principles as an abuse of market dominance,¹²⁹ it is unlikely that they will be implemented in a uniform manner throughout the continent. Different national implementations of pan-European policy are inevitable with the nature of a directive as a legislative instrument¹³⁰ and the way European governance is generally organized. However, the emerging, next-generation broadband market is likely to reveal such stark differences in (de)regulatory approaches between various member states and that the internal market may be jeopardized,¹³¹ which is the ultimate goal of European telecommunications policy.¹³²

In sum, there are some relevant points of critique that can be brought against the new European regulatory framework and the way it deals with network neutrality issues. The compromise bill that will emerge from the conciliation committee, as with many European compromises, is likely to illustrate the conflicts between the federalist (Commission) and sovereignist (Council) branches in EU governance, with an activist Parliament in between.¹³³ The proposed legislation takes a wait-and-see approach to network neutrality and network management, in contrast to the active role European institutions have played in discussing broadband deployment. Network management is not dealt with in much detail, which suggests that the European Commission is afraid to take bold steps to influence markets with a coordinated network neutrality policy. This rigid wait-and-see stance may not be the preferred approach for dealing with network management of next-generation broadband as an emerging market.

128. Examples of these tools include imposed transparency, nondiscrimination, open access and local loop unbundling, price control, and structural separation. *See Access Directive*, *supra* note 85.

129. *But see* Frischmann & van Schewick, *supra* note 12, at 416-420 (providing an exposé on the theoretical possibility of network neutrality violation outside of market dominance).

130. *See* Treaty of Amsterdam Amending the Treaty on European Union, the Treaties Establishing the European Communities and Related Acts, Oct. 2, 1997, 1997 O.J. (C 340) 1, 278 (“A directive shall be binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods.”); *cf.* CRAIG & DE BÚRCA, *supra* note 104, at 279 (“Sometimes the provisions of a directive represent a compromise between Member States on a complex or sensitive matter and in respect of which certain discretionary options are left open to States.”).

131. *See* Chirico et al., *supra* note 110, at 49 (analyzing how particular access tiering on broadband infrastructure is likely to fragment the European internal broadband market).

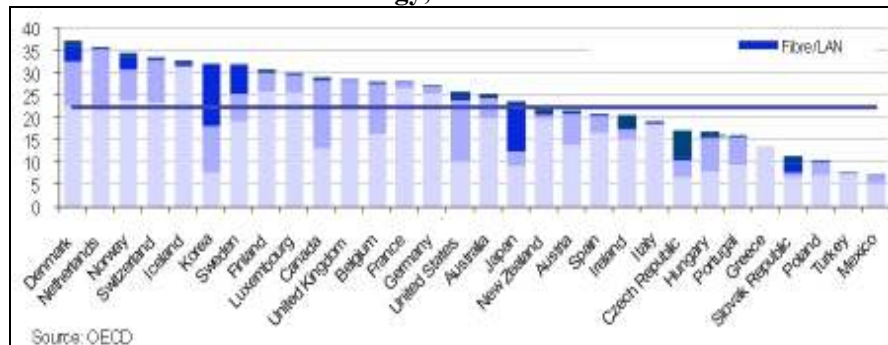
132. *See Commission Directive 88/301*, art. 90, 1988 O. J. (L 131) 73-77 (EEC).

133. *See generally* NEIL NUGENT, *THE GOVERNMENT AND POLITICS OF THE EUROPEAN UNION* (MacMillan 1995) (1989) AND IAN BACHE & STEPHEN GEORGE, *POLITICS IN THE EUROPEAN UNION* (Oxford UP, 2006) for an overview of the relation between the European Institutions and their federalist/sovereignist leanings.

IV. TOWARDS DYNAMIC BROADBAND POLICY

This Section will critically evaluate recent policy that concerns network neutrality in Europe and the United States. Preceding sections have discussed recent developments in U.S. broadband and network management policy, which have developed following successive categorical approaches that have been subject to a high degree of institutional learning. European broadband policy turns out to be more systematic and analytical, in which regulatory intervention is only triggered in cases of market failure. On an anecdotal level, in broadband deployment, this European policy has been quite successful compared to the U.S. approach. This is reflected in the latest OECD figures on broadband deployment,¹³⁴ in which the United States ranks fifteenth out of twenty-nine countries in broadband penetration, performing worse than nine EU countries.

OECD Broadband Subscribers Per One-Hundred Inhabitants by Technology, December 2008



This graph also shows that new EU member states, such as the Czech and Slovak republics, have an equally large or larger percentage of fiber/LAN (next-generation) broadband connections than the United States.¹³⁵

This Article will test, by means of theoretical modeling, the assumption that European policy has encouraged broadband penetration. A venture into antitrust theory will analyze how European and U.S. network neutrality policies relate to regulatory errors, which have significant effects on market development. It has been established that, in emerging markets, such as broadband, errors are not only more likely to occur, but will also

134. OECD Broadband Portal, Broadband Penetration, Historical Time Series Dec. 2008, available at <http://www.oecd.org/sti/ict/broadband/> (Access main portal and download at chart 1m.); see also Communication from the Commission on Preparing Europe's Digital Future i2010 Mid-Term Review, at 4, COM (2008) 199 final (Apr. 17, 2008).

135. OECD Broadband Portal, *Percentage of Fibre Connections in Total Broadband Among Countries Reporting Fibre Subscribers Dec. 2008*, <http://www.oecd.org/sti/ict/broadband/> (Access main portal and download at chart 1l.).

have graver consequences than in established markets.¹³⁶ Thus, testing how EU and U.S. network-management policies relates to regulatory errors is a good indicator of how effective these policies are in achieving the potentially conflicting goal of increased competitive, nondiscriminatory broadband deployment.

The outline of this final Section will be as follows: First, this Section begins by examining antitrust theory and defining the characteristics and costs of regulatory errors. Second, these issues will then be related to broadband as a specific type of emerging market, which requires a flexible regulatory apparatus that is able to pivot between dealing with specific errors, instead of categorically focusing policy on one error specifically. Even though European policymakers are dealing with network neutrality in a way that does not fit with broadband as a specific emerging market, the overall contours of European telecoms regulation is better equipped to deal with regulatory errors than U.S. policy. However, obligated to draft a national broadband plan under the Recovery Act,¹³⁷ the FCC has the opportunity to develop a dynamic and flexible mechanism for network management similar to the European framework, but better.

A. *Antitrust Under False Positives and False Negatives*

More than other legal disciplines, (U.S.) antitrust scholarship has developed a tradition of identifying and evading two common errors: false positives (F_p) and false negatives (F_n). These two errors originate in the statistical sciences, where they are commonly labeled as “type one” (F_p) and “type two” (F_n) errors.¹³⁸ A type-one error designates a false null hypothesis that is mistakenly labeled true; whereas, a type-two error is a true null hypothesis that is mistakenly labeled false.¹³⁹ Following the same mechanism, and as demonstrated in Table 1, a false positive emerges when restrictive antitrust is imposed on a competitive market, thus offering a solution to a problem that does not (yet) exist. A false negative, on the contrary, emerges when antitrust law that is too lenient is imposed on a market that is not sufficiently competitive.¹⁴⁰

Table 1: False Positives and False Negatives in Antitrust Law

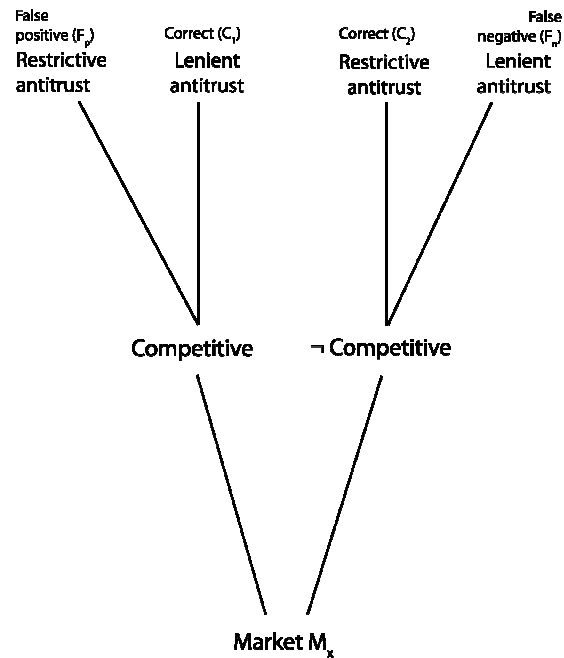
136. See Crocioni, *supra* note 7.

137. See Recovery Act § 6001(k)(1)-(2).

138. Some studies in law and economics also use the type one/type two terminologies. The present Article however will refer to the two errors as false positives and false negatives.

139. See, e.g., R.S. Radford, *Statistical Error and Legal Error: Type One and Type Two Errors and the Law*, 21 LOY. L.A. L. REV. 843 (1988) (implementing the statistical distinction between type one and type two errors in legal scholarship).

140. See McChesney, *supra* note 10, at 1411-18.



This distinction suggests that a safely competitive market requires little enforcement of antitrust law and, that when markets do not function properly, strong antitrust policy is needed to correct market failure. In the statistical sciences, type-one and type-two errors operate on a continuum—by decreasing the chance for type-one errors, the chance of type-two errors increases and vice versa. Moreover, type-one errors generally are considered to be the greater evil.¹⁴¹ In law, both the “weight” of the errors and their inverse relation has been subject to more debate, which has been particularly prominent in antitrust scholarship.¹⁴²

A traditional analysis of false positives and false negatives in antitrust law would conclude that social costs involved with the former are much higher than the latter.¹⁴³ In the case of a false positive, regulation will add a cost to otherwise efficiently functioning markets, while there also will be costs involved in turning back these “bad laws.” Conversely, the costs of false negatives are considered low. For example, a false negative arises when a retail DSL reseller is subjected to a price squeeze by the wholesale operator upstream,¹⁴⁴ which has been determined judicially to fall outside

141. Type-one errors are overtly gullible; whereas, type-two errors are overtly skeptical. In science, the latter is naturally preferred over the former. See Radford, *supra* note 139, at 851.

142. See McChesney, *supra* note 10, at 1412.

143. *Id.* at 1412-13.

144. A price squeeze can emerge when the wholesale firm is vertically integrated into the retail sector, while other retailers rely on the wholesaler to supply the goods they sell themselves. The wholesale operator can squeeze these competing resellers out of the market

the scope of antitrust law.¹⁴⁵ If no additional remedies are imposed here, there will be a cost to society. However, under the traditional rationale, this cost will eventually be mitigated through market entry by competitors, which will, in turn, drive down the retail price. Thus, the market will alternatively self-correct without intervention (and cost). Note that this rationale only works if there are no entry barriers to the market. Thus, in order to prevent a false-positive error, it would be best to focus on eliminating entry barriers. Sticking with the same example, if the wholesale DSL operator controls an essential facility, and there is not sufficient intermodal competition from cable or wireless broadband, the market will not be able to self-correct.¹⁴⁶ There are high entry barriers here, which need to be neutralized.

This analysis is grounded in Chicago School law and economics,¹⁴⁷ and was prominent in scholarship, policymaking, and judicial lawmaking between the 1970s and the early 2000s. Chicago School theorists strongly spoke out against false positives while arguing for a permissive approach to false negatives. After all, under the Chicago School rationale, false negatives would self-correct eventually, while false positives only could be

by simultaneously raising wholesale prices for the resellers while dropping its own retail prices to customers. See Dennis L. Weisman, *Access Pricing and Exclusionary Behavior*, 72 ECON. LETTERS 121, 121-22 (2001); but see J. Gregory Sidak, *Abolishing the Price Squeeze as a Theory of Antitrust Liability*, 4 J. COMPETITION L. & ECON. 279 (2008) (providing a critical view of the role of price squeeze in antitrust law).

145. This example is analogous to the U.S. Supreme Court's February 25, 2009, ruling in *Pacific Bell Tel. Co. v. Linkline Comm., Inc.*, 129 S.Ct. 1109 (2009); see also Brief of Professors and Scholars in Law and Economics as Amici Curiae Supporting Petitioners, *Linkline Comm., Inc. v. SBC Cal., Inc.*, 503 F.3d 876 (9th Cir. 2007) (No. 07-512) (academic discussion of *Linkline* while still at intermediate level).

146. A similar reasoning was developed by the European Court of Justice in its ruling in Case C-202-07, *France Télécom v. Comm'n*, at para. 112 (Apr. 2, 2009), available at http://curia.europa.eu/jcms/jcms/j_6/:

[T]he lack of any possibility of recoupment of losses is not sufficient to prevent the undertaking concerned reinforcing its dominant position, in particular, following the withdrawal from the market of one or a number of its competitors, so that the degree of competition existing on the market, already weakened precisely because of the presence of the undertaking concerned, is further reduced and customers suffer loss as a result of the limitation of the choices available to them.

Id. (emphasis added). It is interesting to compare this judgment with the Supreme Court's *Linkline* case. See 129 S.Ct. 1109.

147. For an eloquent expression of the Chicago rationale regarding false positives and false negatives, see Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 2-3 (1984):

Monopoly is self-destructive. Monopoly prices eventually attract entry. True, this long run may be a long time coming, with loss to society in the interim. The central purpose of antitrust is to speed up the arrival of the long run. But this should not obscure the point: judicial errors that tolerate baleful practices are self-correcting, while erroneous condemnations are not.

Id.

the result of unnecessary intervention in markets.¹⁴⁸ The Chicago School's bias against false positives in antitrust culminated in the question of whether there should be antitrust laws to begin with,¹⁴⁹ and has led to a cautious interpretation of antitrust law by courts. In telecommunications-related cases, this was most clearly demonstrated in *Trinko*, where the Supreme Court was permissive of false-negative errors, and stressed evading false positives as a main motivation for its decision.¹⁵⁰

The Chicago School's dominance in antitrust scholarship has been under attack since the early 2000s, mainly due to criticism of Chicago's tolerant approach to false negatives.¹⁵¹ This new current of antitrust scholars argues, in essence, against categorical antitrust rulings, and attempts to debunk the danger of false positives while pointing attention to the danger of false negatives.¹⁵² Not only are false positives less prevalent than suggested by Chicago School scholars, but, in the end, the social costs of false negatives might be higher than false positives.¹⁵³

148. See McChesney, *supra* note 10, at 1413-14.

149. See ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* (1978); Thomas C. Arthur, *The Costly Quest for Perfect Competition: Kodak and Nonstructural Market Power*, 69 N.Y.U. L. REV. 1 (1994); Easterbrook, *supra* note 147; compare Robert W. Crandall & Clifford Winston, *Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence*, J. ECON. PERSPECTIVES, Fall 2003, with Jonathan B. Baker, *The Case for Antitrust Enforcement*, J. ECON. PERSPECTIVES, Fall 2003. See generally *THE CAUSES AND CONSEQUENCES OF ANTITRUST: THE PUBLIC-CHOICE PERSPECTIVE* (Fred S. McChesney & William F. Shughart II eds., 1995).

150. *Verizon Comm., Inc. v. Law Offices of Curtis V. Trinko, L.L.P.*, 540 U.S. 398, 414 (2004) ("The cost of false positives counsels against an undue expansion of § 2 [Communications Act] liability."); see also *Matsushita Elec. Indus. Co., Ltd., v. Zenith Radio Corp.*, 475 U.S. 574, 594 (1986) ("Thus, mistaken inferences in cases such as this one are especially costly, because they chill the very conduct the antitrust laws are designed to protect.").

151. See Joseph P. Bauer, *Reflections on the Manifold Means of Enforcing the Antitrust Laws: Too Much, Too Little, or Just Right?*, 16 LOY. CONSUMER L. REV. 303 (2004); Joseph P. Bauer, *The Stealth Assault on Antitrust Enforcement: Raising the Barriers for Antitrust Injury and Standing*, 62 U. PITT. L. REV. 437 (2001); Peter C. Carstensen, *False Positives in Identifying Liability for Exclusionary Conduct: Conceptual Error, Business Reality, and Aspen*, 2008 WIS. L. REV. 295 (2008); Stacey L. Dogan & Mark A. Lemley, *Antitrust Law and Regulatory Gaming*, 87 TEX. L. REV. 685 (2009); Mark A. Lemley & Christopher R. Leslie, *Categorical Analysis in Antitrust Jurisprudence*, 93 IOWA L. REV. 1207 (2008).

152. This new wave of antitrust study was joined by the great Alfred Kahn, who referred to Justice Scalia's reasoning on the costs of false positive errors to categorically exceed false negatives in *Matsushita* as a "bromide that fails to differentiate between the *initiation* of price competition from the response that punishes and *suppresses* it and restores the status quo ante." Alfred E. Kahn, *Telecommunications: The Transition from Regulation to Antitrust*, 5 J. TELECOMM. & HIGH TECH L. 159, 172 (2006) (emphasis added).

153. False negative errors may lead to overlooked dynamic efficiency problems, as competitors are in fact disincentivized to enter the market *Cf.* Dogan & Lemley, *supra* note 151, at 703.

The Chicago School's studies rightly point out that economic determinism is present in traditional antitrust doctrines. However, in the absence of empirical proof, the Chicago School's scholars' claims are incomplete, and will need to be supplemented by extensive empirical research. For a start, nonetheless, it is a worthwhile exercise to identify three basic premises underlying Chicago's assumptions on false positives and false negatives in antitrust: (1) courts very often commit false-positive errors in antitrust litigation; (2) false positives in antitrust law have a detrimental effect on efficient market behavior; and (3) unregulated markets are efficient.¹⁵⁴ Criticizing these premises as overtly categorical is valid and persuasive on an anecdotal level.¹⁵⁵ Moreover, drawing attention to the danger of allowing too many false negatives in antitrust is pertinent.¹⁵⁶

However, in order to develop an effective rebuttal to the antitrust regime, which fights false positives at the risk of false negatives, it is necessary to criticize the Chicago School on its own strong suit—grounding legal conclusions in economic analysis. In general, there seems to be a desire to update Chicago's assumptions on antitrust law, but the new wave of U.S. post-Chicago antitrust scholars seems to be ill-equipped to meet this demand. Interestingly, while the ratio between false positives and false negatives seems to be of little interest to European regulators and antitrust scholars,¹⁵⁷ the most constructive work in law and economics on balancing the two errors beyond the Chicago School's approach may actually be European.

Indeed, Pietro Crocioni's elaborate study concerns mitigating the abuse of dominance in emerging markets, which are particularly prone to false-positive and false-negative errors. Because of the general uncertainty that characterizes next-generation broadband as an emerging market, not only is there a greater risk for false-negative and false-positive errors to occur, but also the consequences of these errors in terms of market foreclosure are much greater.¹⁵⁸ It is worthwhile, therefore, to arrive at more precise taxonomy of the risks and costs associated with the two types of errors in the different kinds of emerging markets, allowing for more tailored network-management policymaking in emerging markets such as

154. See Carstensen, *supra* note 151, at 309-21.

155. See Lemley & Leslie, *supra* note 151, at 1260.

156. See Carstensen, *supra* note 151, at 321.

157. See, e.g., Renato Nazzini, *The Microsoft Case and the Future of Article 82, ANTITRUST*, Spring 2008, at 59, 63 ("In the EU, the European Commission and the Community Courts have rarely, if ever, engaged in a discussion of the risk of false positives or false negatives as a factor shaping enforcement policy or legal rules.").

158. See Crocioni, *supra* note 7, at 451.

broadband. This approach, moreover, bridges false positives and false negatives in antitrust with similar regulatory errors.

A key contribution of Crocioni's study lies in its critique of the seamless offsetting of false-negative and false-positive costs in the first place. Through theoretical modeling, the author demonstrates that—at least in a static setting—both costs are of an altogether different nature and, thus, cannot be offset as effortlessly as often assumed.¹⁵⁹ False-negative costs concern a deadweight loss of added price above marginal costs that are easily quantifiable;¹⁶⁰ whereas, false-positive errors lead to hypothetic loss in innovation, which is more difficult to quantify precisely.¹⁶¹ Whereas false-negative costs are mainly backward looking, measuring the costs of false positives is a forward-looking exercise. This calls into question any categorical assumption about the compared costs of both types of errors and, specifically, criticizes the Chicago School's premise of false-positive costs to be substantially higher than false-negative costs under all circumstances.¹⁶²

Rather, these results suggest that, instead of categorical policy, a more precise weighing of false-negative and false-positive costs, based on the particulars of an (emerging) market, is in place. This is valid in both

159. The models assume a wholesale essential facility monopolist, who caters to a competitive retail market downstream, in which it is also vertically integrated—as is often the case in telecoms. *See id.* at 453. Note that the models do not account for intermodal competition between adjacent wholesale operators of different infrastructures. For a detailed study on offsetting intermodal and intramodal competition in telecommunications and broadband, see Pulber & Yoo, *supra* note 26, at 152-86.

160. In this model, the absence of antitrust intervention in a noncompetitive market leads to rent-seeking behavior by the wholesale monopolist. Consequently, an increase in price and decrease in quantity lead to a quantifiable deadweight cost even further above marginal cost. *See* Crocioni, *supra* note 7, at 503-04.

161. In case of unjustified antitrust, the monopolist is disincentivized to improve his or her service, which leads to a loss of improvement that would be valued by consumers. The upward movement of the linear demand curve, which is supposed to occur under normal circumstances, does not take place; this implies a welfare loss. *See id.* at 504-05.

162. Crocioni's critique is supported by more extensive modeling conducted by LEAR, which concludes that

[i]t is true that market power may not last forever and that entry of new firms or technological change may drastically challenge even a well-established dominant position. However, there is no clear-cut explanation of why bad rules take longer to be reversed than the time required by markets to correct the anticompetitive effects of abusive conducts, nor has any empirical evidence so far been brought forward to sustain this conjecture.

PAOLO BUCCIROSSI, GIANCARLO SPAGNOLO & CRISTIANA VITALE, LABORATORIO DI ECONOMIA, ANTITRUST, REGOLAMENTAZIONE (LEAR), *The Cost of Inappropriate Interventions/Non Interventions Under Article 82*, at § 6.38 (2006) (providing an economic discussion paper prepared for the United Kingdom's Office of Fair Trading). For the modeling affirming this statement, see annexes C, D, and E for nonspillover assumptions, spillover assumptions, and their effect on ancillary markets, respectively. *Id.* at annexes C-E.

antitrust and regulatory settings. An emerging market, in which detrimental network effects are more problematic than a dependence on innovation and investment,¹⁶³ suggests an approach in which false-negative errors are evaded at the risk of false-positive errors.¹⁶⁴ After all, restrictive policy will be more effective in guarding against the welfare loss of a noncompetitive market. Conversely, when a market is highly dependent on investment for dynamic efficiency and less prone to negative network effects,¹⁶⁵ an approach in which false positives are avoided at the cost of false negatives is needed.¹⁶⁶ In order to prevent foreclosure of innovative markets involving significant fixed costs, regulators might grant more leeway to monopolists in order to safeguard innovation in the long run. In an emerging market only characterized by above-average uncertainty¹⁶⁷—often the case in very new markets—it is advised that antitrust authorities take a wait-and-see approach until it can be determined whether enforcement should focus on a specific type of error.¹⁶⁸ The most complex situation arises when all three features apply: (1) above-average uncertainty, (2) dependence on innovation and investment, and (3) strong network effects.¹⁶⁹ In this case, “middle ground remedies” are preferred, which

cater to some extent for possible competition concerns but not to the fullest extent, allowing some incentives for [the monopolist] to innovate and invest. An example could be imposing as a remedy an obligation to supply without requiring that [the essential facility] is supplied at cost. However, this approach could be more suited to a regulatory type of intervention than under competition law.¹⁷⁰

Thus, the most complex emerging markets call for a flexible regulatory mechanism, supplemental to antitrust law, which is able to pivot between fighting false-negative and false-positive errors, depending on which type of error carries the largest cost in a specific situation. This suggests that broadband, as a complex emerging market,¹⁷¹ is in need of a dynamic interplay between evading false-positive and false-negative costs, as both have a clear effect on the market, but not necessarily at the same time and to the same extent under all scenarios. In order to minimize social

163. Crocioni, *supra* note 7, at 498.

164. *Id.* at 510.

165. *Id.* at 498.

166. *Id.* at 511.

167. *Id.* at 498.

168. *Id.* at 507.

169. *Id.* at 498.

170. *Id.* at 512.

171. As previously defined, next generation broadband is subject to above-average uncertainty, highly dependent on investment and innovation, and prone to network effects. See *supra* notes 32-35.

costs, as previously suggested, a regulatory mechanism should provide flexibility, allowing lenient or restrictive intervention in the broadband market depending on whether the danger of a specific type of error is more apparent in a given situation.

The following and final section argues that the theoretical premises underlying the European framework for telecommunications have the potential to function according to this flexible principle, yet fail to do so in network neutrality policy. By contrast, recent U.S. policy has switched between categorical approaches to deregulating and re-regulating broadband, which may lead to regulatory uncertainty. Therefore, this Article recommends that U.S. lawmakers implement a flexible and dynamic regulatory mechanism of network management for its domestic broadband market.

B. Network Management Under False Positives and False Negatives

The broadband market is too complex and uncertain to benefit from a categorical approach to (de)regulation. Rather, any intervention should be flexible and adaptive to specific circumstances. Because broadband, as an emerging market, is subject to above-average uncertainty, prone to network effects, *and* dependent on investment, but not necessarily to the same extent at all times, antitrust law and regulation should be applied flexibly and on a case-by-case basis.¹⁷² This does not, of course, rule out the possibility of erroneous intervention or erroneous restraint, but at least offers a mechanism that attempts to strike a balance between avoiding false-negative and false-positive errors in a transparent manner that benefits firms, consumers, and regulators.

European telecommunications law has the potential to function according to this principle. However, with network neutrality, European policy does not live up to this potential. As will be demonstrated herein, the European wait-and-see stance on network neutrality advances an incorrect definition of broadband as an emerging market, which is not congruent with the overall European policy in next-generation broadband deployment. By expanding Table 1 into Table 2, this Article illustrates how the European regulatory framework works in regulating next-generation broadband deployment.

As long as the market is competitive, only antitrust law applies.¹⁷³ This is the default position in EU telecommunications policy (*C₁*). Under

172. The appropriateness of a case-by-case approach in dealing with network neutrality issued in the FCC's Notice of Proposed Rulemaking, which is a promising sign. See Preserving the Open Internet and Broadband Industry Practices *supra* note 40, at §134.

173. See *Framework Directive* Recital 27, *supra* note 85.

this scenario, there is supposed to be effective competition between broadband operators, and no reported abuse of vertical dominance on specific infrastructures. If, through a review process by member states' NRAs, competition authorities, or by the European Commission's own research, there turns out to be a market failure or abuse of dominance,¹⁷⁴ the possibility of a false negative arises (F_n). This situation could occur if an operator of next-generation broadband networks is not penalized for abusive conduct under antitrust law because a national regulatory or competition authority fears impeding investment by making false-positive errors.¹⁷⁵ In this case, the regulatory framework with sector-specific measures, which is supposed to correct the market failure at hand and deal with detrimental network effects, when needed, can be put into motion.¹⁷⁶ This naturally leads to situation (C_2)—justified intervention in case the particular broadband market is not sufficiently competitive.¹⁷⁷ Note that the trap of false positives (F_p) logically does not apply in this model. After all, it is inherent to the European mechanism that no sector-specific regulation is imposed if the market is deemed to be sufficiently competitive, and all regulatory intervention is lifted once markets develop sustainable competition. By effect, the error with the greatest cost in terms of innovation and investment (F_p) is avoided, while the mechanism of the framework works such that problematic externalities are targeted by sector-specific regulation.

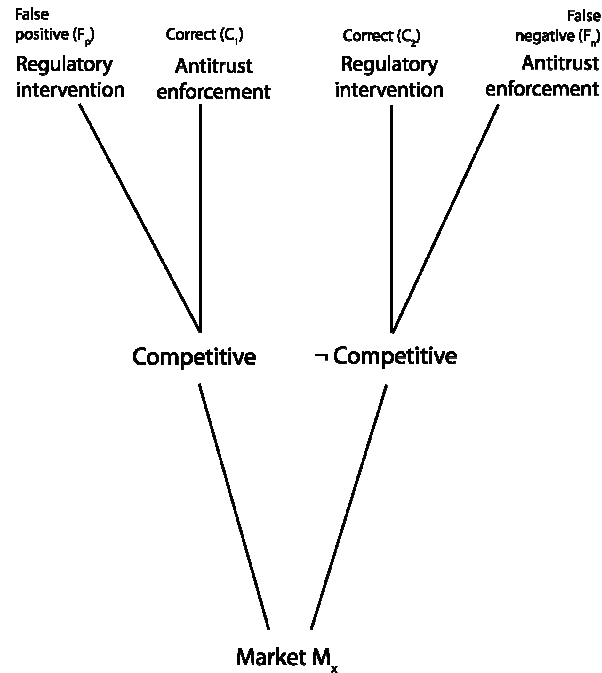
Table 2: False-Positive and False-Negative Errors in the European Framework for Telecommunications

174. With the aid of the Commission Recommendation on telecommunications markets subject to ex ante regulation, see , 2003, O.J. (L 114) 45 *supra* note 91, at 45-47.

175. For instance, this was the case in Germany. To stimulate former incumbent Deutsche Telekom to roll out the VDSL infrastructure in 2006, the German government had planned to impose minimal regulation on incumbent Deutsche Telekom, effectively abandoning nondiscrimination. This prompted a dispute between the German government and the European Commission. See Press Release, Eur. Comm'n, Comm'n Launches "Fast Track" Infringement Proceedings Against Germany for "Regulatory Holidays" for Deutsche Telekom (Feb. 26, 2007), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/237&format=HTML&aged=0&language=EN&guiLanguage=en>; see also Pierre Larouche, *Europe and Investment in Infrastructure with Emphasis on Electronic Communications* (TILEC Discussion Paper No. DP 2007-031, 2007).

176. See Access Directive, *supra* note 85.

177. In case of the Deutsche Telekom example, *supra* note 175, functional separation of the incumbent VDSL company would be a possible option. See *supra* note 116 for a discussion on functional separation.



This scheme highlights the efficiency of the European regulatory framework for telecommunications, and the potential promise this mechanism shows in regulating next-generation broadband. As previously demonstrated, broadband is a particular emerging market that is generally subject to above-average uncertainty and equally characterized by a dependence on investment and a vulnerability to externalities, such as network effects.¹⁷⁸ These market characteristics suggest a vulnerability to false-negative and false-positive errors,¹⁷⁹ both of which have negative consequences on the further development of next-generation broadband. European institutions more or less follow this rationale in developing policy to stimulate next-generation broadband deployment. It is recognized that, while network operators should be given at least some leeway to recoup their investments in next-generation infrastructure, and avoid false-positive errors for this reason. Nonetheless, the available regulatory tools are expanded with functional separation of incumbents' "regular" and "next-generation" operations in case the costs of false-negative errors exceed the costs of false-positive errors.¹⁸⁰

However, European institutions have failed to follow the same rationale when formulating policy on network neutrality. Besides increased

178. See Crocioni, *supra* note 7.

179. *Id.*

180. Cf. Impact Assessment, *supra* note 3, at 27-29.

consumer protection laws,¹⁸¹ lawmakers seem inclined to avoid developing explicit network neutrality policy and unsure as to the extent that network neutrality will be an issue in the European market.¹⁸² This supports a general wait-and-see approach to network neutrality. Because this issue has yet to develop, any regulatory intervention would be premature.¹⁸³ When following the aforementioned definition of emerging markets, this wait-and-see approach suggests an understanding of broadband as an emerging market subject to above-average uncertainty only.¹⁸⁴ This is the case in very new emerging markets, which indeed justifies a very prudent approach to intervention.¹⁸⁵ However, the wait-and-see stance to network neutrality does not square with the general European approach to developing next-generation infrastructure, in which it is—rightly—recognized that broadband is subject to above-average uncertainty, prone to network effects, *and* is highly dependent on investment.¹⁸⁶ This state of the market requires a dynamic approach to offset investment dependence and negative externalities by flexible regulation, which clearly is not what the European institutions plan to do with network neutrality.

Therefore, it can be concluded that, while the European regulatory framework has a latent potential to address network neutrality in the systematic and flexible manner that is required, it fails to transform this potential into actual policy. Returning to the state of affairs in the United States, a different situation arises. With *Brand X* came a deregulatory approach to broadband markets, which, through *Comcast*, the BTOP of the Recovery Act, and the FCC's Proposed Rulemaking, is under debate again. When analyzing these shifts in policy alongside the framework of false positives and false negatives, it turns out that the broadband regulatory practices of the previous administration focused mainly on false-positive traps, at the cost of increasing the likelihood of false negatives. This is also the strategy employed by the Supreme Court in *Trinko*¹⁸⁷ and *Brand X*.¹⁸⁸

181. *Id.* at 95-96.

182. See Review of EU Regulatory Framework, *supra* note 100, at 32.

183. This was echoed by an open letter from prominent European academics. See Martin E. Cave, et. al., Statement by European Academics on the Inappropriateness of Imposing Increased Internet Regulation in the EU (Jan. 8, 2009), *available at* <http://ssrn.com/abstract=1329926>; cf. Wong & Garrie, *supra* note 5, at 339 (“the existing regulations under . . . the Access and Interconnection Directive means that that scenario of access tiering between network operators and application providers may appear remote.”).

184. See Crocioni, *supra* note 7.

185. *Id.* at 507.

186. See *supra* note 120. See also Pierre Larouche, Europe and Investment in Infrastructure with Emphasis on Electronic Communications, TILEC Discussion Paper, DP 2007-31 (2007), *available at* <http://ssrn.com/abstract=1020899>.

187. See *Verizon Comm., Inc. v. Law Offices of Curtis V. Trinko*, L.L.P., 540 U.S. 398, 415 (2004).

Common carriage regulation was deemed to hold back otherwise competitive markets, with great costs involved. This resulted in a stronger reliance on antitrust law, as both DSL and cable would fall outside the scope of sector-specific Title II regulation.¹⁸⁹

Commentators argue that this method decreases false-positive errors, while also acknowledging that such a strategy typically works on a trial-and-error basis with a high degree in institutional learning.¹⁹⁰ Moreover, the deregulatory approach directly after *Brand X* supposes a market structure of workable competition.¹⁹¹ After all, theoretically, only in a competitive setting will committed false-negative errors be self-corrected by the market.¹⁹² Academics have since voiced compelling critique against this Chicago School rationale,¹⁹³ which has been validated by actual modeling efforts.¹⁹⁴ It turns out that any categorical approach to (de)regulating broadband markets is ill advised. Rather, in an emerging, uncertain, and complex market, such as broadband, a flexible policy that pivots between focusing on false positives and false negatives is likely to be most successful. However, through the *Comcast* case¹⁹⁵ and the Recovery Act,¹⁹⁶ a theme has developed in which regulatory oversight is increased—constituting a more categorical focus on tackling false-negative errors. Under the given circumstances, it is unclear whether, for next-generation broadband, these regulatory initiatives would constitute a false positive (F_p) or a correct intervention to market failure (C_2); again, the only way to find out is through trial and error. Moreover, it could be argued that, particularly in the Recovery Act, there is a higher risk of a false-positive trap because the proposed ex ante measures apply on a very broad basis.¹⁹⁷

What may be emerging is a pattern by which old categorical approaches are replaced by new ones. Indeed, it has been stated that the

188. See *Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967 (2005).

189. See 47 U.S.C. § 253 (2007).

190. See Bauer & Bohlin, *supra* note 76, at 50.

191. See *Wireline Broadband Order*, *supra* note 48. See Also Bauer & Brodin, *id.*, at 49: “Although it was not explicitly invoked in policy debates, the US approach toward NGN follows the logic of this method. When the new regime was put into place, the anticipated future market structure was one of workable competition.” *Id.*

192. See McChesney, *supra* note 10, at 1412-13.

193. For an overview of this critical scholarship, see *supra* note 147.

194. See Buccirossi, Spagnolo & Vitale, *supra* note 162; see also Crocioni, *supra* note 7.

195. See Formal Complaint of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, *Memorandum Opinion and Order*, *supra* note 1.

196. See Recovery Act, Pub. L. No. 111-5, 123 Stat. 115 (2009).

197. For a compelling argument against blanket ex-ante rules in network management issues, see *Network Neutrality, Consumers, and Innovation*, *supra* note 12.

FCC has a long-standing tradition in categorical rulemaking,¹⁹⁸ and has developed a habit in which disputes are mitigated on a “legislative-like basis, with a limited track record in handling adjudications and expedited proceedings under a rule-of-law model.”¹⁹⁹

Thus, instead of categorical policy depending on trial and error, U.S. regulators need a more analytical mechanism to monitor broadband markets, analogous to the European system previously described. The main modification of recent policy would be a larger role for the FCC in administering competition in broadband markets. The U.S. Supreme Court has repeatedly voiced its discomfort with administering competition in telecommunications through judicial lawmaking in antitrust.²⁰⁰ Rather, the role of monitoring the competitiveness in U.S. broadband markets should be entrusted to the FCC, similar to the role played by the Directorates General for Competition and Information Society in the European Commission. Indeed, the idea of charging the FCC with increased antitrust oversight over the broadband market is not new and has been argued convincingly by others.²⁰¹ This Article has attempted to strengthen this argument by outlining the analytical grounds under which an agency like the FCC could implement a comprehensive strategy in network management and broadband deployment.

Interestingly, the Recovery Act endorses such a role for the FCC. After all, as specified in the Act, the FCC is obligated to draft a National Broadband Plan.²⁰² In this plan, the FCC could draft an analytical model in

198. See Weiser, *supra* note 12, at 311.

199. *Id.* at 318.

200. See, e.g., *Verizon Comm., Inc. v. Law Offices of Curtis V. Trinko, L.L.P.*, 540 U.S. 398, 415 (2004) (quoting Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 853 (1990): “No court should impose a duty to deal that it cannot explain or adequately and reasonably supervise. The problem should be deemed irremedia[ble] by antitrust law when compulsory access requires the court to assume the day-to-day controls characteristic of a regulatory agency.”); *accord* *Pacific Bell Tel. Co. v. Linkline Comm., Inc.*, 129 S.Ct. 1109 (2009):

It is difficult enough for courts to identify and remedy an alleged anticompetitive practice at one level, such as predatory pricing in retail markets or a violation of the duty-to-deal doctrine at the wholesale level. . . . And courts would be aiming at a moving target, since it is the *interaction* between these two prices that may result in a squeeze.

Id. at 1121 (emphasis in original).

201. See, e.g., Atkinson & Weiser, *supra* note 12, at 2; Kahn, *supra* note 152; Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence Of Antitrust and Regulation in the Internet Age*, 17 HARV. J. L. & TECH. 85 (2003); cf. Jonathan E. Nuechterlein, *Antitrust Oversight of an Antitrust Dispute: An Institutional Perspective on the Net Neutrality Debate*, 7 J. ON TELECOMM. & HIGH TECH. L. 19, 21 (2009) (arguing for network neutrality rulemaking to be administered by the Department of Justice and FTC).

202. Recovery Act § 6001(k)(2).

which procedures for market monitoring are delineated and specifies a string of tools for regulatory intervention in case market failure is detected in these developing broadband infrastructures. Like the European regulatory framework, such a mechanism would allow for correction in case of a false-negative error, while evading the false-positive trap altogether. Sector-specific intervention would only be applied in case of demonstrated market failure. Similarly, as in the EU, any regulatory measure should be evaluated on a continuous basis, and be lifted as soon as robust competition allows.²⁰³

This approach has the benefit of being flexible and analytical at the same time—allowing for a tailored approach in network neutrality issues that is also transparent and straightforward. Such a mechanism would pivot between generic antitrust law and regulatory intervention based on necessity. The “pivoting player” would be the FCC. Network neutrality is a topic too delicate to fall under antitrust law or sector-specific provisions *per se*. At the same time, there is a great benefit to precedent-setting through transparent and systematic policy at the FCC. The outlined European approach to antitrust-triggered regulation for broadband offers exactly that, and would offer the promise to rule out regulatory errors that have plagued U.S. telecommunications policy for ages.

V. CONCLUSION

In this Article, a comparative analysis has been developed between European and U.S. policy in next-generation broadband and network management. After a brief description of current problematic issues of network neutrality and the characteristics of broadband as a complex emerging market, a critical summary of the most recent events in U.S. policymaking was present. Furthermore, European telecommunications policy has been addressed at length. This analysis was meant to evaluate the process towards the regulatory framework of 2002 and its current revision, which was designed as a mechanism in which antitrust law and sector-specific regulation interact. The effectiveness of this mechanism can be demonstrated both empirically and theoretically in terms of next-generation broadband deployment. However, the European institutions have failed to recognize the potential of their own regulatory framework in dealing with network neutrality. In a complex and emerging market, such as broadband, only a dynamic and flexible regulatory mechanism will minimize regulatory errors. Therefore, U.S. policymakers, and, particularly, the FCC, should pay close attention to developments in Europe. While there are, indeed, notable problems in European broadband

203. See 2003 O.J. (L 114) 45, *supra* note 91.

policy, the European approach may offer the necessary regulatory tools to boost the United States' digital future. The FCC and the Obama Administration are strongly advised to develop a National Broadband Plan according to European precedent that embraces workable competition, so that a reliable and neutral broadband Internet can reach as many Americans as possible.